

THE *Soybean Digest*



Secretary Freeman

The Support Price on 1961-Crop Soybeans

U.S. Secretary of Agriculture Orville Freeman in an exclusive statement for the Soybean Digest on the new price support level for soybeans tells growers:

"We set this year's soybean support 45¢ a bushel above last year's. We did this to relate production of this important oil crop to the new emergency feed grain program.

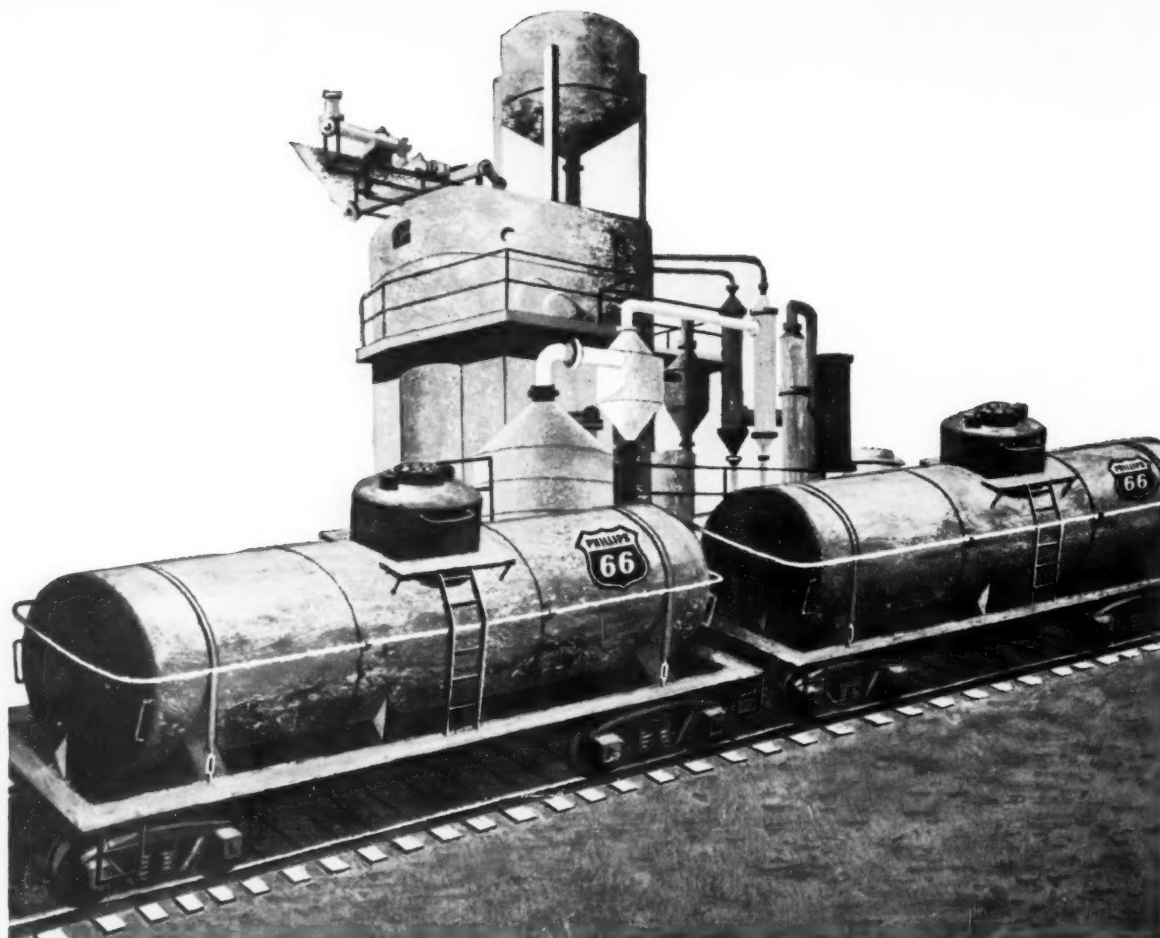
"With requirements for vegetable oils increasing throughout the world, we felt that now was an opportune time to try to bring about a better balance between our soybean and our grain acreages. To help insure that additional acreages planted to soybeans would come out of acreages normally planted to crops now in abundant supply, such as wheat and the feed grains, we have made 1961 soybean price support available only to those farmers who maintain their 1959-60 average acreage of conserving and idle land.

"In other words, we felt that if a farmer wanted to increase his soybean acreage he should do it on land he previously used for such crops as wheat, cotton, corn, grain sorghums, or other feed crops, rather than on acreage he now has under conservation practices — the sort of acreage we expect to expand under the emergency feed grain program."

For more information on the soybean price support program see Washington Digest, page 36.

MAY • 1961

VOLUME 21 • NUMBER 7



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Official Publication of American Soybean Association and
Soybean Council of America, Inc.

HUDSON, IOWA

Vol. 21

May, 1961

No. 7

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THE SOYBEAN DIGEST

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Business, publication, advertising
and circulation, Hudson, Iowa.
Taylor 5-3296.

ADVERTISING REPRESENTATIVES:

Art Hutchison and David Hanley,
Room 1517, 228 N. LaSalle, Chicago,
Ill. STate 2-9211.

John K. O'Donnell, 153 Seaman
Ave., New York 34, N. Y., LO 7-5010.

Published on the 10th of each month at
Hudson, Iowa, by the American Soybean
Association. Entered as second class matter
Nov. 20, 1940, at the post office at Hudson,
Iowa, under the Act of Mar. 3, 1879.

Forms close on 20th of month preceding.

Subscription rates—\$3 per year; Canada
and other members of the Pan American
Union, \$3.50, other foreign, \$4. Single cur-
rent copy 30¢, back copy 50¢. Subscriptions
accepted from members only.

Refer all address changes, undeliverable
copies and subscriptions to the Soybean
Digest, Hudson, Iowa.

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Objectives of the American Soybean Association include the bringing together of all persons interested in the production, distribution and utilization of soybeans; the collection and dissemination of the best available information relating to both the practical and scientific phases of the problems of increased yields coupled with lessened costs; the safeguarding of production against diseases and insect pests; the promotion of the development of new varieties; the encouragement of the interest of federal and state governments and experiment stations; and the rendering of all possible services to the members of the Association.



EDITOR'S DESK

. . . By GEO. M. STRAYER

Written in Tokyo, Japan, Apr. 24

Japan Will Grow More Livestock

CONFERENCES WITH representatives of all the soybean trade groups with whom we have been working here since 1955, as well as conferences with U. S. Embassy officials, Japanese governmental officials and our own JASI staff members during the 2 weeks I have now been working here, lead me to several conclusions:

1—It is generally agreed that the Japanese government will officially announce the Automatic Allocation system on soybean imports to become effective as of July 1, 1961. Assuming the legislation is passed, free imports of soybeans, without the necessity of obtaining dollar allocations from the government, will start as of that date.

2—The expected big surge in soybean imports into Japan from the United States with the start of the AA system will not occur as of July 1 because of present selling prices of U. S. soybeans, but it will make itself felt with the 1961 crop.

3—Japanese needs of soybeans between this date and the beginning of the new-crop movement are largely covered by contracts already in existence, and the present relatively high selling prices will discourage much additional buying before new-crop movement.

4—Present selling prices of soybeans in the United States have created great renewed interest in the possibility of obtaining soybeans from Red Chinese sources for future and present needs and import firms are busily engaged in trying to obtain firm commitments. Changes in the status of trade relations between Japan and Red China during the 2 weeks I have been here again make soybean buying from Chinese sources a possibility—if there really are supplies of Red China soybeans to be offered.

5—The 3% increase in import duty on soybeans is now official, making a total import duty of 13% on U. S. soybeans entering Japan. It appears that for some minor concessions on automobiles and a few other items our negotiators at the Geneva conferences were willing to give away a portion of our major soybean market.

6—Japanese producers of food products are faced with a very serious probability of price increases for their products, thus limiting their sale. They are making a valiant attempt to increase their efficiency and thus forestall the necessity of price increases.

7—Determined efforts are being made by users

of soybean oil meal to secure the AA system of imports on that commodity, in order to force the price of that commodity to lower levels on the Japanese market. Very naturally this is being resisted by the Japanese processors.

8—Realizing the probable price adjustments which will come within Japan in both soybean oil meal and soybean oil when the AA system begins to exert its influence, several major processors are planning or building new, large and efficient processing plants on deep water in order to reduce handling and processing costs and become competitive pricewise on end products. This will probably reduce the number of processing plants operating on soybeans in Japan. It will also bring into the picture several companies not now engaged in this field of activity. Included may be a number of U. S. firms.

9—The great field of expansion of soybean oil meal usage in the next decade will be in livestock feeding. As Japan's economic level continues to rise—and the gross national product has been rising at a 9% level for the past several years—her people will be in position to buy more livestock products. That means more livestock production in Japan. Efficient livestock production requires protein. It requires protein in greater quantities to feed the same number of people as when used directly. It is the big area of expansion for soybean oil meal in Japan and will come as rapidly as the livestock industry expands. It will be accompanied by greater feed grain imports by Japan, and should be coordinated with it.

10—When you drive, ride the trains and fly over three of the four major islands of Japan, as I have in the past 2 weeks, you cannot help but again marvel at the tremendous quantities of food produced by the Japanese people on the very limited land areas which offer any possibility of tillage. Japan must import a major portion of her foodstuffs. That means she must export goods to the markets of the world in order that she may have the exchange with which to buy U. S. soybeans.

As producers of soybeans we should do everything in our power to encourage, in spite of certain U. S. protests, the purchase of Japanese-made cameras, radios, television sets and other items by our midwestern and midsouth people. An expanding market for U. S. soybeans in Japan will continue to require two-way trade.

26-Year Cooperator with Illinois, Purdue, Retires

CYRIL J. WAGNER, gentleman, friend, farmer and a 26-year soybean research cooperator with both Purdue and Illinois Agricultural Experiment Stations has retired from his Eldorado, Ill., farm to live at 1098 Sunny Point Drive, Eau Gallie, Fla.

Cyril with his father, the late Louis P. Wagner, began cooperative work with Purdue University on soybeans in 1935 on the family farm east of Evansville, Ind. In 1935 the American Soybean Association held a portion of its annual meeting on the Wagner farm to observe extensive plantings of soybean varieties and study cultural practices.

In 1941, Cyril moved to Eldorado, Ill., and began cooperation with the University of Illinois. His work with soybeans has been continuous since that time. He cooperated in oat and wheat research also during a part of this period.

Cooperation has been continuous with the Wagner family in Indiana and at times has included wheat and fertility research in addition to soybeans. Cooperation was with Louis and Cyril from 1935-1941, Leo and Marie (Wagner) Hirsch from 1942-1945, and with Bernard V. (Cyril's brother) since 1946.

The Wagners have seen soybean yields per acre more than double on their home farm since 1935. Kingwa, a black-seeded hay variety, was the

best available variety in southwestern Indiana in 1935 with a 25-bushel per acre yield. In 1960, Kent, a newly released variety, was grown on their farm under contract for production of foundation seed and made 53 bushels per acre.

The Wagners and soybeans have grown together. They have helped

in the development of Gibson, Patoka, Wabash, Perry, Clark, and Kent varieties. Purdue and Illinois Universities salute these fine farm families for a job well done.

Seize Crotalaria Contaminated Cars

THE GOVERNMENT recently seized six railroad cars loaded with about 625,000 pounds of soybeans at Memphis, Tenn., because they contained crotalaria seed, according to local newspaper reports. Permission was granted to reclean the beans to remove the crotalaria seeds.



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—Photo by A. H. Probst

CYRIL J. WAGNER, left, and his brother Bernard take an admiring look at their favorite crop, soybeans, on the family farm near Evansville, Ind.

EDITOR'S DESK

By M. STRAYER

A BIG PROBLEM...

There is no question about toxicity of crotalaria seed. There is no question about what will have to be done. All lots of soybeans containing any crotalaria seed must be recleaned before marketing. The seed can be removed. It is a relatively slow operation, but with proper equipment it can be done.

From this date forward there is no excuse for a single lot of soybeans containing crotalaria seed being exported from the United States. No lot of soybeans for processing will be accepted.

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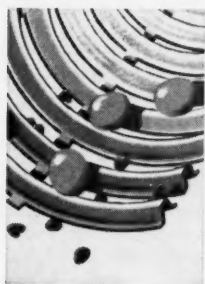


Fig. 1

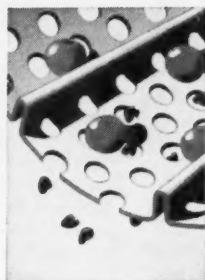
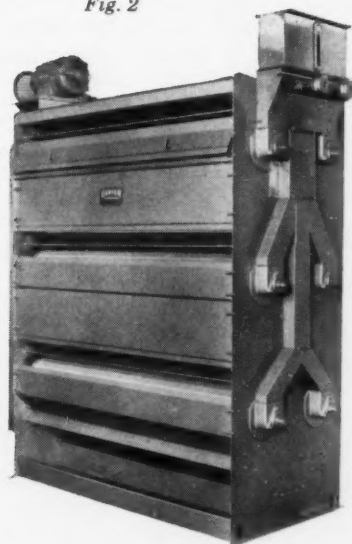


Fig. 2



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Only 40% Grow Adapted Varieties

By R. H. COLE,
F. B. SPRINGER, JR.,
H. W. CRITTENDEN and
W. A. CONNELL²

SOYBEAN SURVEYS were conducted in Delaware on Aug. 15 and Sept. 26, 1960. The objectives of these surveys were (1) to study the practices presently in use by producers and (2) to determine what production problems face the soybean grower in Delaware. Forty-eight randomly selected stops were made on each survey. Data were collected on agronomic, pathological and entomological characters and practices (table 1).

Less than 40% of the fields visited were planted to recommended varieties in 1960. In 16 of the 48 fields, mixtures of two or more varieties were found. Varieties that matured in 124 days were mixed with varieties needing 148 days to mature. Fields planted to nonrecommended varieties were classified as possible problem areas. Problems with regard to maturity and lodging were principally a reflection of the use of nonrecommended varieties and mixtures. One-fourth of the fields were estimated to mature at least 10 days after the first killing frost. In 17 fields lodging was estimated to be 50% or greater. Indications from this survey were that an association might exist among planting rate, variety and lodging.

Although 15 fields were found to have some degree of reduction in vigor, mineral deficiencies were identified in only three of these fields. Ten of the remainder showed evidence of nutrient deficiencies that

could not be attributed to any one element.

Problems from using nonrecommended management procedures were not as pronounced as with other practices. Only four fields were classified as planted outside of the recommended spring planting period. Forty-three fields were row-planted and five drilled. In 15 of the row-planted fields, spacing between rows was 40 inches or greater. Inadequate row coverage by the plant was classified as a possible problem. Perhaps the most striking management problem was seeding rate within the row. Fourteen fields were planted at rates of one plant per inch or closer.

Over one-third of the fields included in the survey were classified as having a serious weed control problem. It was noted, however, that weeds in two-thirds of the major problem fields and all the possible problem fields could have been controlled by broadleaf chemical weed killers and adequate cultural management.

Several diseases were identified in the fields visited. Downy mildew was classified as of major importance in 38 fields in the 1960 surveys. The importance of the other diseases, reported to be a major problem in no less than nine fields, should not be minimized. High incidence of these diseases could markedly reduce the cash value of the soybean crop.

The insect pests found infesting soybeans, in order of their abundance, were the green clover worm, Mexican bean beetle, spider mite, grasshopper, Japanese beetle, white fly, thrip, leaf hopper, blister beetle,



garden flea hopper, green leaf beetle, and spotted cucumber beetle. Insects classified as creating a major problem in at least one of the fields visited were the green clover worm, the Mexican bean beetle, and the spider mite.

Summary

The major problems identified in the 1960 Delaware soybean surveys were as follows:

1—Varietal mixtures and pure stands of nonrecommended varieties were found in a majority of the fields surveyed.

2—Broadleaf weeds could have been controlled by chemical weed killers and adequate cultural practices in a majority of the problem fields visited.

3—Several diseases were identified and classified as of major importance.

4—Planting rate within the row was often excessive.

5—While a large number of different insects were identified, only three were of major importance.

6—Ratings of plant vigor disclosed

TABLE 1. CLASSIFICATION OF FIELDS, BASED ON THE 1960 SOYBEAN SURVEYS RESULTS

Characters and practices	Number of fields		
	Not a problem	A possible problem	A major problem
Variety planted	19	13	16
Maturity	36	0	12
Lodging	20	11	17
Vigor	33	12	3
Planting date	44	4	0
Planting rate	28	6	14
Row width*	28	15	0
Row coverage*	29	14	0
Weed control	21	9	18
Downy mildew	5	5	38
Purple stain	32	5	11
Bacterial leaf spot ..	35	4	9
Pod and stem blight ..	38	0	10
Insects	31	12	5

* Includes only row plantings.

¹ Published as Misc. Paper No. 381, Delaware Agricultural Experiment Station. Contribution No. 133 of the Department of Plant Pathology.

² Asst. Prof. of Agronomy, Asst. Agronomist, Asst. Prof. of Plant Pathology, and Assoc. Prof. of Entomology, respectively, University of Delaware.

three fields with visible mineral deficiency symptoms. Ten additional fields, however, were ranked as insufficiently fertilized.

None of the problems were classified as major with the practices planting date, row width and row coverage. Lodging appeared to be associated with planting rate and variety. The late maturity observed in many fields was usually a reflection of the use of nonrecommended varieties.

A definite lag between research findings and farmer use of information was noted. Immediate influence on the state's average yield per acre should be evidenced by the use of recommended varieties and adequate chemical and cultural weed control. Results of these surveys will be valuable in initiating the 1961 Agricultural Extension program and in identifying possible associations among characters to be incorporated into research studies. Surveys will be conducted and similar treatment given the results in 1961.

Bulk Shipment of Soybean Oil from Charleston, S. C.

RECENTLY IN Charleston, S. C., the Greek ship Eurylochus loaded the first shipment of soybean oil in bulk—about 250 metric tons—which was destined for Hong Kong, China.

This shipment was made possible by the foresightedness of the officers of the Carolina Shipping Co.

About 2 years ago, Thaddeus Street, executive vice president, and other officers of the company bought a special portable machine to transfer bulk oil shipments from land carriers to ocean carriers. Although at that time there were no such shipments in the immediate offing, their men went to Philadelphia for training. With the arrival of the Eurylochus the equipment was put into use.

The pump is completely portable, self-contained and can be moved to any dock. It is a Worthington 5 GR rotary pump run by a Caterpillar diesel engine. The machine is the first on the South Atlantic Coast.

Exporters of the refined soybean oil are Archer-Daniels-Midland Co., Minneapolis, Minn.

For the first time in Georgetown, S. C., the Norwegian MS Vistafjord loaded a cargo of 3,000 long tons of expeller meal destined for Norwegian ports. This was the first movement of soybean meal out of Georgetown and the Carolina Shipping Co., agents for the line, loaded the cargo.

Coker Will Offer Two New Varieties

TWO NEW soybean varieties will be released for 1962 planting by Coker breeders at Lake Cormorant, Miss., this fall. Both strains from which these as yet unnamed varieties have been developed will be in large seed increase plantings this year on Coker farms.

Breeding work on the two strains has been done principally on Coker's Hartsville, S. C., farms but they have been tested in the Coker nurseries in various locations throughout Mississippi.

The outstanding characteristics of one of the strains are its high yields in combination with disease and its shatter resistance. The other is generally similar to Yelnanda, but with higher yields, higher oil content, equal or superior shatter resistance, and resistance to disease prevalent in this area.

Listed now under breeding numbers 57-225 and 57-257, both strains are from a cross between Majos, a late maturing type, with low oil content, shatter resistance and disease susceptibility, and Lee, an early high yielding oil content, disease and shatter resistant variety. The cross was made 8 years ago.

Henry W. Webb, Coker plant



THE HIGH productivity of breeding line 57-225, a Coker soybean strain which will be released for 1962 planting, is shown in these well-fruited plants held by Henry W. Webb, Coker plant breeder.

breeder, describes the two strains as follows:

"Strain No. 57-225 is best suited for early and mid-season planting in areas where Jackson is adapted. In our tests, this strain has consistently yielded as much or more than Jackson. Its oil content is equal to Jackson and its high degree of shatter resistance is much greater than Jackson. It has all that Jackson has plus disease resistance and high shatter resistance.

"Strain No. 57-257 is a later maturing type with maturity and other characteristics comparable or superior to Yelnanda. It is therefore a possible replacement for Yelnanda."

This latter strain, Webb said, is adapted to later season planting than Jackson or its sister strain 57-225. It is especially desirable for planting after small grain.

Both the new strains are generally adapted to the coastal plains area.

Introduction of these two varieties is part of the re-emphasis of soybeans in Coker plant breeding programs resulting from the large increase of soybean acreage in the South.

Coker's Pedigreed Seed Co. has improved and reintroduced the Yelnanda variety to meet the need for after-small-grain planting. At the same time, Cokers are working with thousands of progeny rows, increase blocks, and test rows devoted to evaluation and seed increase of new varieties developed through hybridization.

Among the promising lines are several selections from a cross involving Yelnanda and Lee. Among these are strains much better adapted to growing on light soils or for later planting than Lee. At the same time, they are high yielding and even more disease resistant than Yelnanda. Many of the strains are characterized by the shatterproofness of the two parents.

May Grow Soybeans in Harmon County, Okla.

SOYBEANS MAY be a soil building and cash crop in Harmon County in extreme southwestern Oklahoma in a few years, according to Oklahoma Extension News. Bilbo Coke harvested the first soybeans in the county in 1960, so far as County Agent Leroy Howell knows. Mr. Coke planted 15 acres of the Lee variety in rotation with cotton.

"If soybeans continue to produce as they did last year, they will be a better crop than grain sorghum in rotation with cotton," Mr. Coke said.

Effect of Molybdenum on Soybean Yield



MOLYBDENUM applications do not always increase soybean yields. In this Sikeston, Mo., experimental field treated beans on left yielded 49 bushels per acre, untreated beans on right, 55 bushels.

WHAT RESULTS can you expect from treating soybeans with molybdenum? Results of preliminary tests at a number of experiment stations vary. No widespread benefits have so far been shown by Illinois tests, a University of Illinois agronomist reports.

A. L. Lang, speaking before the annual Illinois Custom Spray Operators' Training School, cautions that research data are not sufficient to make specific and detailed local recommendations.

Lang reported that field tests were conducted on five experiment fields in 1960. Except for one field, the results showed no positive or negative effects from the molybdenum treatment.

At the Carlinville field, however, all molybdenum-treated plots averaged about 3 bushels an acre more than untreated plots. The Illinois soil scientists are now interested in making further chemical tests of the soil and the soybean seed to see whether they can identify the cause of this yield increase. On this field there seemed to be no relation between plots with lime, no lime or other fertility treatments.

Lang also reported survey results from 196 farmers. They showed that 47 increased their yields from using molybdenum-treated seed, 63 had no difference in yields and the rest had no fair comparison because they treated the whole field and left no check. Those who reported higher yields had increases of $\frac{1}{2}$ to 4 bushels an acre for the molybdenum treatment.

Lang also reported that in 1960 Indiana tests at five locations molybdenum treatment failed to affect

either growth or yield. Chemical analysis of the beans at the U. S. Regional Soybean Laboratory at Urbana showed no effect on the percent of protein or oil as a result of the treatment.

Concerning the Illinois tests on molybdenum, S. R. Aldrich, University of Illinois professor of soil fertility extension, states: "It may be that we were concentrating our efforts in the wrong areas of the state. Dr. Barber's work in Indiana suggests that the soils that are lowest in molybdenum are dark-colored prairie soils in the northwestern part of the state rather than the strongly acid light-colored soils in the southern part of the state. Our research last year was confined almost exclusively to southern Illinois. This year, Professor Lang indicates that he plans to have some molybdenum-treated plots in all of the soil experiment fields including those in northern Illinois."

Stanley A. Barber, now visiting soil chemist at the University of California, comments on the Indiana tests: "We have had molybdenum investigations in Indiana since 1954. Soybeans were investigated in 1959 and 1960. No significant responses were obtained on six field experiments harvested for yield in 1959.

"In 1960 significant responses were obtained on two of five experiments harvested for yield and grown in a soil area suspected of being low in molybdenum. The yield increases were 3.9 and 7.6 bushels respectively.

"Five additional experiments on soils not suspected of being deficient gave no response. The availability of molybdenum appears to be related to soil type. The prairie soils, Odell and Chalmers, appear to be

among those which are suspected of being deficient.

"We plan further investigations in 1961."

K. C. Berger, professor of soils, University of Wisconsin, reports on molybdenum tests of a preliminary nature on soybeans in 1960, where the soil was definitely deficient in molybdenum. "Our soybean yield was increased about 55% with small amounts of sodium molybdate. We found that without molybdenum the soybeans did not nodulate properly and often were completely barren of nodules even though all the seed was freshly inoculated the day of planting."

Says Dr. Berger: "It is my opinion that we will find other areas of molybdenum deficiency in Wisconsin, particularly on unlimed soils."

Molybdenum has been included in all trace element experiments on the University of Missouri soils department research farms over the state. These mixtures have been used only when adequate nitrogen and minerals have been added for top yields. These experiments, conducted for more than 10 years, have never shown any benefit from application of molybdenum.

This trace mineral is one of the elements essential for plant growth, but is needed in very small amounts, George Smith, chairman, University of Missouri soils department, explains. In areas where molybdenum is in short supply, the deficiency may be corrected by a few ounces of a chemical salt applied per acre.

A deficiency is most likely on acid soils. When limestone is added according to soil tests, the availability of native molybdenum from the soil is increased.

THE NEWS IN BRIEF

THE CROP, MARKETS AND OTHER ITEMS OF NOTE

Planting Some Late In South

Seeding of oats and other small grains was nearing completion in most Northern States May 1. It appeared soybean planting could start on time, or around mid-May in North Central States. But planting is a little late in the South. The Soybean Digest had received no reports of substantial soybean planting when this page was made up. It was **just getting under way in North Carolina and was about to start in Arkansas.** Arkansas crop reporting service states that soybean planting was about to start in Jefferson County, and that some acreage probably would be planted soon in a number of other Arkansas counties.

J. Ross Fleetwood, University of Missouri, said a late, wet spring delayed planting of corn and cotton in Missouri and soybeans would have to wait. He expected soybean planting to begin between May 1 and 10 in Missouri.

Dixon Jordan, Standard Commission Co., Memphis, Tenn., believed **much of the corn acreage in the Midsouth would be diverted to soybeans due to the late season.** He looked for the soybean acreage to increase 7% in the Midsouth.

Average Over Mar. 1 Intentions

Nearly all our observers predict an increase in soybean acreage this spring and it undoubtedly will exceed Mar. 1 planting intentions.

Quoting Russell S. Davis, Clayton, Ill.: "The wild splurge in the bean market . . . has created unprecedented excitement among growers. Raising the support price has added fuel to the flames and as many growers as possibly can will get into the program so they will be assured of getting support price."

David G. Wing, Mechanicsburg, Ohio: "Looks like 25% increase. Had such a wet spring that very little oats were planted. Price will make farmers plant all beans they can under corn program."

George E. Spain, North Carolina State College: Interest is high in North Carolina for soybeans but . . . estimations of intended acreage would be only a guess right now. Most observers say 10% increase or more."

Charles V. Simpson, Waterville, Minn., looks for the increase in acreage in south central Minnesota to be 20%, double the Mar. 1 intentions increase. "I'm sure that some oats and barley acreage will wind up as soybeans this year."

But Keith Bilbrey, Mississippi County agent, Blytheville, Ark., notes that the cotton acreage will be almost identical with last year in Mississippi County, and that any increase in beans will have to come out of the very small corn acreage.

Most observers say seed demand is considerably higher at this time than a year ago, with the real shortage of certified seed developing some places. Germination tests of soybean seed show exceptionally good results in many northern areas.

Japan to Buy from Red China?

The Japanese government in April dropped some of the restrictions on direct trade with Red China that had been in effect for 3 years. As a result of this action and recent high U. S. prices, **China is expected to sell some soybeans and soybean meal in Japan.** The Chinese had already sold 1,100 tons of meal in Japan by mid-April with more being offered, Geo. M. Strayer, executive vice president of the American Soybean Association, who returned to the United States from Tokyo May 1, reported.

The Japanese International Trade and Industry Ministry (MITI) announced allocation of \$25 million for import of 200,000 metric tons of soybeans during the April-June quarter. Most will come from the United

States but some may come from China. MITI officials also announced allocations of \$3 million for import of 30,000 metric tons of soybeans for bean cake for the 6-month period, April through September.

Mr. Strayer says the big question is whether the Chinese will be in position to make deliveries of soybeans. (See his report from Japan on page 4.)

The tariff rate on soybeans into Japan will be hiked from 10% to 13% under the GATT agreements. The new rate of 13% will not go into effect until import of soybeans is liberalized by placing them under the automatic allocation system, and this is expected to take place July 1.

**Exports
to Remain
High**

U. S. exports of fats and oils will remain high, at least for the balance of the fiscal year ending June 30, due to only a small rise in foreign free world output, a continuing rise in foreign consumption and increased feeding of soybean oil, according to the U. S. Department of Agriculture. Soybean exports, spurred in part by sharply reduced exports from China, will total at least 10% above last year's 133 million bushels for the fiscal year in spite of higher prices, says USDA.

Import duties on peanut oil, flaxseed and linseed oil, were terminated effective May 5 as result of action taken by President Kennedy. The President took the action following a study of recommendations by the U. S. Tariff Commission that duties on peanut oil be eliminated entirely and the duties on flaxseed and linseed be lowered from 50% to 15% ad valorem.

USDA on Apr. 28 announced a \$30.4 million Food-for-Peace agreement with Yugoslavia under P. L. 480. The agreement included \$8.7 million worth of soybean or cottonseed oil, or about 58 million pounds. USDA announced Apr. 26 that 10 million pounds of peanut oil refined from Commodity Credit Corp. stocks will be made available in July and August for donation to needy persons overseas under the Food for Peace program.

Spanish firms have bought directly \$3.5 million worth of U. S. soybean meal, totaling 38,760 metric tons, according to our reports. At least 7,500 metric tons will be shipped in May.

**Soybean
Price
Outlook**

While the price of soybean oil has displayed most of the increase expected for the entire 1960-61 marketing year, it will remain firm this spring and summer, says USDA. Season's average for the entire 1960-61 marketing year is forecast at 11.5¢ per pound, up over 35% from last year. Prices of soybean meal during April-September 1961 are expected to be more stable than in the first half of feeding year, averaging somewhat above the \$53 per ton in the same 6 months last year. USDA says soybean prices should continue strong this spring and summer.

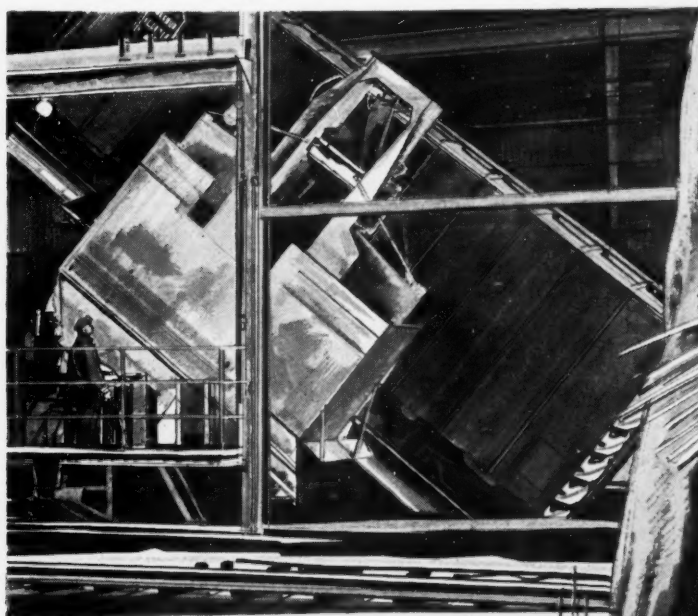
**Iowa
Checkoff
Bill**

A bill to allow Iowa commodity groups to collect a "check-off" on sales of farm commodities including soybeans, the funds to be used for educational and promotional purposes, passed the Iowa House in March but was still being held by the sifting committee of the Senate as the legislature neared adjournment and prospects for passage by the Senate appeared dim.

A. E. Jolley, Chatham, was reelected chairman of the Ontario Soybean Growers Marketing Board at the initial meeting in Chatham in April. Richard Smith, Tilbury, was reelected first vice chairman and a member of the board of the American Soybean Association. Frank Hyatt, Wheatley, was elected second vice chairman. Fourth member of the executive board is past chairman Gilles DePutter, Appin.

The National Soybean Processors Association will hold its annual meeting at the Edgewater Beach Hotel in Chicago Aug. 3-4, R. G. Houghtlin, president, has announced. NSPA will meet jointly with the advisory board of the National Soybean Crop Improvement Council as in the past.

Eight minute "flip" speeds his grain to Europe. At Port Cargill, Minnesota, a giant boxcar is flipped on end, and 2,000 bushels of this farmer's grain are unloaded in just eight minutes. Over the rivers, lakes and seas of the world Cargill employs fleets of barges and ocean-going vessels to hurry the grain to distant ports. Through a complex network of transportation and storage, Cargill extends the arm of the American farmer to feed hungry mouths in hundreds of markets from Italy to India. And like the tides of the ocean, the benefits come flowing back and deposit themselves where they started . . . on the American farm. It's another example of how Cargill extends the reach of this important businessman — the American farmer.



CARGILL *EXTENDING THE REACH OF
THE AMERICAN FARMER*

Effect of Photoperiod On Soybean Development

By **D. M. BROWN**
Ontario Research Foundation, Toronto, Canada

And **C. W. OWEN**
Agricultural Research Station, Harrow, Canada



D. M. Brown

IN AN EDITORIAL of the June 1960 issue of the Soybean Digest it was stated that soybeans can be planted late and still mature because "The maturity cycle on soybeans is governed by photoperiodism—the length of day . . . when the length of day reaches a certain stage the soybean matures, regardless of how long the plant has been growing."

Ever since the original studies on photoperiodism (2)¹ over 40 years ago, it has been well known that

¹ Refers to literature citations.

flowering and maturing dates of soybeans are governed to a great extent by the length of day. More recently it has been shown that the length of the dark period is the controlling factor. Thus, most varieties require that the daily dark period be a certain critical length before flower primordia are initiated. However, soybeans do not initiate flowers as soon as this critical night length is reached, but only after they grow to certain size and so many days or heat units have elapsed. Thus any delay in planting

will cause a delay in flowering and maturity.

This is borne out by the data presented in table 1, for a date-of-planting experiment conducted at Harrow, Ontario, from 1949 to 1956. It is seen that in the earliest planting Mandarin started to flower on July 3 and matured Sept. 8, whereas in the latest planting flowering started on July 30 and maturity occurred Oct. 4.

Table 1. AVERAGE PHENOLOGICAL DATES FOR MANDARIN SOYBEANS GROWN AT HARROW, ONTARIO, FROM 1949 TO 1956.

Average dates of			
Planting	Emergence	Flowering	Maturity
May 15	May 29	July 3	Sept. 8
May 29	June 6	July 9	Sept. 12
June 12	June 18	July 19	Sept. 22
June 26	July 2	July 30	Oct. 4

Usually it is the decrease in the time required to reach flowering and maturity with delay in planting that is attributed to photoperiod. This decrease is illustrated in table 2 for the Harrow date-of-planting experiment. It is seen that the period from planting to flowering in the first date required 15 days more time than in the fourth date. Part of this time can be accounted for in

Table 2. AVERAGE NUMBER OF DAYS FROM PLANTING TO PHENOLOGICAL DATES FOR MANDARIN SOYBEANS GROWN AT HARROW, ONTARIO, FROM 1949 TO 1956.

Date of planting	Average number of days from planting to		
	Emergence	Flowering	Maturity
1	14	49	116
2	8	41	106
3	6	37	102
4	6	34	100



DATE OF PLANTING experiment at Harrow Aug. 9, 1955.

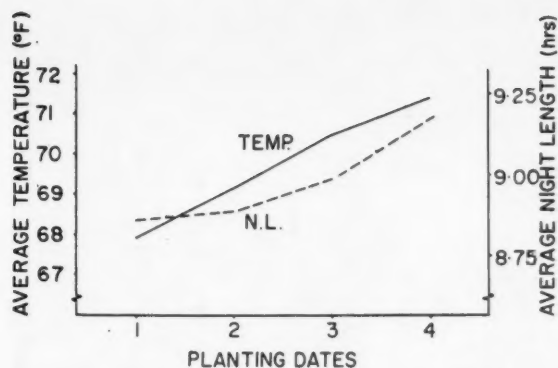


Figure 1. Relation of planting date to temperature and night length in the preflowering period of soybeans grown at Harrow, Ontario, 1949-1956.

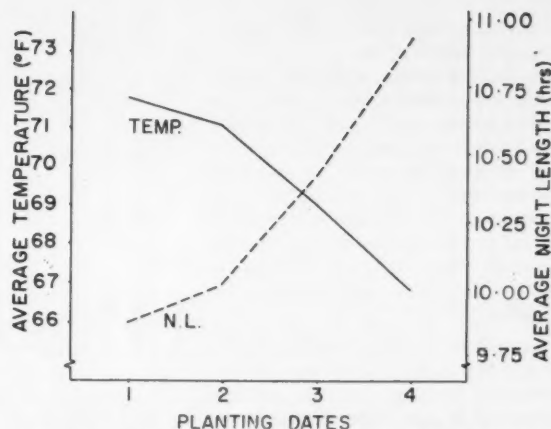


Figure 2. Relation of planting date to temperature and night length in the flowering to maturity period of soybeans grown at Harrow, Ontario, 1949-1956.

TABLE 3. AVERAGES OF DAYS AND HEAT UNITS (S.D.I. UNITS X DARK HOURS) FOR TWO PERIODS OF DEVELOPMENT AND FOUR PLANTING DATES OF MANDARIN SOYBEANS GROWN AT HARROW, ONTARIO, FROM 1949-1956.

Date of planting	Emergence to flowering		Flowering to maturity	
	Days	Heat units	Days	Heat units
1	35	7720	67	17570
2	33	7570	65	17080
3	31	7510	65	16950
4	28	7100	66	17190

the extra time required for emergence in the first date. However, days from emergence to flowering also decreased with delayed planting, in fact the fourth planting required 20% less time than the first in this period, table 3. Most of this decrease can be accounted for by considering the increases in average temperature and night length with delayed planting, shown in figure 1. Between the first and fourth dates average temperatures increased nearly 3.5°F. and average night lengths 0.3 hours. These two factors were combined by taking the product of S.D.I. (heat) units² determined from the average temperatures, and total dark hours in this period. These figures, table 3, show that the difference between the first and fourth dates is reduced to 8% compared to the 20% difference in number of days. Therefore, most of the decrease in time required to reach flowering with delay in planting can be attributed to these three factors:

- (1) Time required for emergence;
- (2) Temperatures;
- (3) Night length (photoperiod).

Data presented in tables 2 and 3 and figure 2 for flowering to ma-

turity, indicate a similar response to temperature and night length in this period as well. It is obvious from data in table 3 that the average number of days between flowering and maturity is nearly the same for all four dates of planting. However, average temperatures decrease and average night lengths increase between the first and fourth dates shown in figure 2, in fact, temperatures decrease 7% and night lengths increase 10%. The product of average S.D.I. units and total dark hours in this period results in a difference of 2% to 3% among dates of planting. Therefore the opposite trends of temperature and night length tend to cancel themselves and both heat units and days in this period are nearly the same for all four dates of planting, shown in table 3.

The trends of maximum and minimum temperature and night length

for the soybean growing season at Harrow are shown in figure 3. The curves illustrate the reason for the relationships obtained in figures 1 and 2.

These results correspond to those of Garner and Allard (2), since in their experiments soybean flowering and maturity were promoted by artificially lengthening the dark period.

In the Harrow experiment the combination of increasing night lengths and temperatures up to flowering accounts for most of the decrease in time in the pre-flowering period as planting is delayed. Also it is the increase in average night lengths that accounts for the similarity in time between flowering and maturity among dates when temperatures decreased with delayed planting dates. To quote from Garner and Allard (3, p. 731): "In all except the very early variety

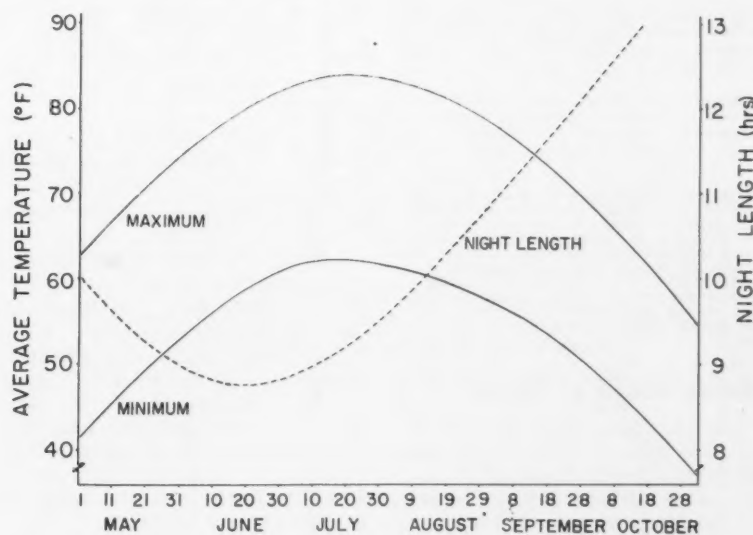


Figure 3. Trends of maximum and minimum temperature and night length for the soybean growing season at Harrow, Ontario.

² Heat units used in this paper are derived from the Soybean Development Index (S.D.I.) as described in another paper (1).

Now the real reason that "soybeans can be planted late" is because of their growth characteristic. Flowers and pods develop over an extended period, sometimes a month or more in length, and the seeds in the pods ripen according to the time the pods were initiated. Thus, as long as some of the seeds have ripened, a killing frost will not destroy the crop completely and some yield of ripe seed will be obtained. Whereas with corn, the kernels are initiated over a much shorter period and if these have not had a chance to develop completely before frost very little if any yield will be obtained.

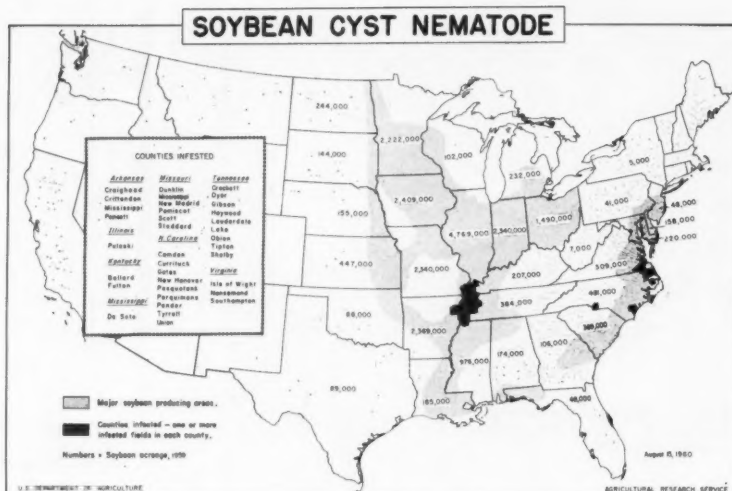
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- 1—Brown, D. M. Soybean Ecology I. Development-temperature relationships from controlled-environment studies. *Agron. J.* 52: (September) 1960.
- 2—Garner, W. W. and Allard, H. A. Effect of the relative length of day and night on the flowering and fruiting of plants. *Smithsonian Report*, 569-588. 1920.
- 3—Garner, W. W. and Allard, H. A. Photoperiodic response of soybeans in relation to temperature and other environmental factors. *J. Agr. Res.* 41: 719-735. 1930.

³ It is of interest to note that the early variety of soybeans referred to by Garner and Allard is Mandarin, one of the varieties grown in the date of planting experiment at Harrow and used for illustration in this paper. At Harrow, Mandarin was grown closer to its region of adaptation than when grown in Maryland, and for this reason responded to differences in day-length when planted late in the season.

Heads Board of Trade

Giles A. Coors, Jr., Fred Lovitt & Co., was elected president of the Memphis (Tenn.) Board of Trade, succeeding Harry D. Tobias, Goldenrod Oil Meal Sales Co. Elected vice president was Leonard F. Dienell, Allied Mills, Inc.



Corn Earworm was Important Pest in 1960

CORN EARWORM was the most important pest of soybeans in Arkansas in 1960, when a total of 129,140 acres were treated for the pest in that state, according to the plant pest control division of U. S. Department of Agriculture's Agricultural Research Service in its annual summary of insect conditions. Late planted soybeans were more attractive to the pest than early planted beans, and moths moved to soybeans as cotton became unattractive.

Damage from corn earworm was widespread in eastern Virginia, but the pest was generally less severe on soybeans in Virginia than in 1959. There was some infestation of corn earworm in Georgia, Maryland and Delaware.

Green cloverworm was also quite common on soybeans in Arkansas last year; caused noticeable injury in Delaware; and light infestations were reported in Maryland.

Larval infestations of the velvetbean caterpillar were unusually light in Louisiana during 1960. They were also reported in Georgia.

Bean leaf beetle was common throughout Illinois during 1960, with several fields being treated for the pest. And this pest and southern corn rootworm caused considerable reduction in yield in western Iowa. Bean leaf beetle was also reported in Delaware and Louisiana.

Mexican bean beetle was the principal injurious pest reported on soy-

beans in North Carolina in 1960, with 75% of the leaves being injured by mid-June in Scotland County. They were also reported in Delaware, Virginia, and Georgia.

Infestations of stinkbugs on soybeans were widespread in Arkansas last year, remaining until harvest, with some 9,670 acres being treated for the pest. Principal species were southern green stink bug, rice stink bug, and brown stink bug. Stink bugs, principally southern green stink bug, caused considerable damage to soybeans in some Louisiana parishes in September and October.

Heavy infestations of three-cornered alfalfa leaf hopper heavily infested some Louisiana soybean fields. Thrips did some damage in Delaware and Maryland.

Only five new counties were reported infested with the soybean cyst nematode in 1960. They were Poinsett County, Ark.; Mississippi and Scott Counties, Mo.; Union County, N. C.; and Crockett County, Tenn.

Dannen Executive

Fred Woelfffing has been promoted to executive vice president of Dannen Mills, St. Joseph, Mo. Mr. Woelfffing has been vice president in charge of administration for Dannen for 6 years. He will retain his administrative duties and supervise operation of the firm's country station division.



R. G. Houghtlin

*Industry cooperation spells
a bright future for the*

SOYBEAN INDUSTRY WITHIN THE USA

By ROBERT G. HOUGHTLIN
President, National Soybean Processors
Association. Remarks before the annual
Chemurgic Conference in Cincinnati

THE DOMESTIC soybean industry is America's most important source of vegetable oils and protein meals. In recent years through its expanding export markets it has become an important factor in the economics of the Free World.

The phenomenal growth of the domestic soybean industry is a matter of record.

What have been the important factors responsible for the present status of our industry? In my estimation, the most important was the foresight and fortitude of the soybean pioneers—both growers and processors. The growers planted a crop for which there were only limited markets. The processors risked capital to produce products for which there were no established markets. Each group had to start from scratch and elbow its way into the marketplace. I would certainly be remiss if I failed to mention the important contributions of the agronomists and breeders at both the state and national levels. Without new adapted superior varieties of soybeans, the crop never could have been expanded into the vast areas now adapted to the crop.

Two Associations

Early in the history of the U. S. soybean industry two associations were formed: the American Soybean Association for the growers, and the National Soybean Processors Association for the processors. I like to think that these organizations played and are playing an important role in the development of the industry.

The ASA has provided informed leadership for the growers and,

through their sensible support price proposals to the USDA, soybeans have not as yet fallen into the surplus category despite the phenomenal growth of the crop. Its official publication, The Soybean Digest, has provided a forum which the entire industry has used to promote the general welfare. ASA's early venture into foreign marketing helped to show the way for the establishment of the Soybean Council, which is a cooperative effort of growers, processors and handlers in expanding foreign outlets for the industry. The importance of the ASA in the development of the industry cannot be overemphasized.

The National Soybean Processors Association was established in 1930. Since its founding, it has always maintained in its membership more than 80% of the soybean industry processing capacity. Through its trading rules committees, equitable rules for trading the products of the industry were developed. Today practically all domestic trading of soybean products is done under NSPA rules—proof of their acceptance by buyers and sellers.

The NSPA Soybean Research Council through the years has fostered improved quality of soybean products and has kept the industry and associated groups advised of the latest developments in soybean technology. In the early days this group were scientific salesmen for the industry. They assisted in opening up markets for the products of soy processing. Today they are assisting the industry in an advisory capacity—counseling on problems facing us and suggesting ways and means of answering through research the problems that stand in the way of greater progress.

In the mid-forties, the NSPA es-

tablished the Soybean Crop Improvement Council to work with state and government agencies and with the producers and handlers to expand the economic production of soybeans. This activity became increasingly important and in 1948 a full-time director was obtained to head up this effort. In the intervening years an advisory board, composed of representatives from the 24 most important soybean producing states and the USDA, was formed and is now an integral part of the operation. The Council has distributed some 350,000 copies of the booklet, Soybean Farming, to growers, agricultural teachers, handlers and the general public. The Council issues a quarterly publication, Soybean News, to a mailing of more than 21,000. Several years ago a color film, "Soybeans—The Feature Story," was produced. This has been shown to many thousands, and almost 25 million persons are estimated to have viewed it on TV. Other committees of the Association have been equally active and effective.

This recital of some of the accomplishments of the NSPA has been presented to you merely to point up the fact that the industry has been far-sighted in preparing for the increased responsibilities which have come its way.

Look at the Future

Enough for the past—how about the present and the future?

In my humble opinion, much greater efforts will be needed in the future to maintain and expand our industry. Most of the easier applied research has been accomplished and future improvement in the quality of our products will depend on the determination of basic facts about

the soybean and its components. Certainly we will continue to make quality improvements in our raw materials and our finished products, but any major accomplishments will depend on a breakthrough on the basic knowledge of the soybean and its products.

Recognizing this fact, the industry last year established the Soybean Oil Research Conference. This group, made up of the USDA and industry oil technologists, is concentrating efforts toward completely solving the flavor stability problem of liquid soybean oil. Applied research has greatly improved the keeping quality of liquid soy oil. Further improvement will be necessary, however, to fully utilize an expanded market for the product. Hydrogenated soy oil is entirely satisfactory but liquid soy still has some limitations which we feel can only be removed through basic research. The Conference with the financial backing of the Soybean Council of America, Inc., and the NSPA has placed several research grants directed toward the solution of this problem.

The USDA continues its important research efforts directed toward this problem. Industry research laboratories are also devoting time and effort toward its solution. No overnight miracles are anticipated. With this concentration of talent on the problem, however, we are optimistic that our fundamental knowledge of soy oil will be increased with concurrent quality improvements and that the final solution will be forthcoming.

The basic material for the operation of the industry is also in need of further intensive study. The soybean breeder has developed adaptable varieties for the expanding areas of production. He has improved the genetic strains and physical characteristics of the plant. He has developed strains that are resistant to the diseases that have developed as the crop expanded. Additional research, however, is vitally needed to ensure the future of this crop. Our Crop Improvement Council and the American Soybean Association are presently making an effort to obtain increased federal funds for this purpose.

The industry for years has furnished modest financial support for soybean research projects at various universities. Recognizing the need for basic information it joined hands last year with the National Plant Food Institute and individual fertilizer manufacturers in establishing basic studies at Illinois, Iowa

State and Purdue Universities.

This 3-year program, costing some \$70,000, should substantially increase our basic knowledge of the physiology and nutrition of the soybean.

I have not given attention to the work of the Soybean Council of America as my friend R. W. Fischer was delegated that assignment. I would like to remind you, however, that the Council is the result of the efforts and foresight of the domestic industry—growers, processors and handlers. Its marketing efforts will have a profound effect on the future of the soybean industry.

Now as to the future of this industry. The products—high quality protein and versatile oil—will be needed in increased quantities at home and in friendly nations abroad. Future demand for soy oil and its products probably will be keyed to the increase in population. Domestic demand for soy protein for balanced

feeding should expand much faster as there is greater potential so long as costs are held to economical levels. Edible soy protein demand should increase at an even faster rate as that market has scarcely been scratched. In short, the domestic markets for the protein fraction should expand much faster than the demand for soy oil and its derivatives. In my humble opinion, this underlies the necessity for developing and expanding foreign markets for soy oil.

Assuming that intensified basic research efforts are productive, that foreign product markets are expanded (especially for oil), and that government programs are reasonable and don't result in unmanageable soybean surpluses with the resultant government controls and stifling of personal initiative, the soybean industry should show a steady and sound growth through the sixties.

MARYLAND SOYBEAN MEETING

Moisture Dockage too Heavy?

MANY SOYBEAN producers feel they are not treated fairly by the moisture dockage which they must accept in marketed soybeans, a recent statewide meeting of soybean producers at Cambridge, Md., was told. The idea was also expressed that some of the moisture testing units, as well as the personnel, are not accurate in all their work.

Highest yield of soybeans was obtained from 24-inch rows, said Robert Leffel, University of Maryland agronomist. Dr. Leffel said a good rule of thumb for planting rate of soybeans is 8 to 10 viable seeds per foot of row. Seeding too thickly may reduce yield as well as the ability of the plant to stand during a storm, he said. Maryland agronomists wish to express rate of planting in number of viable seeds per foot of row rather than pounds per acre, due to the variation in number of seeds per pound, according to Dr. Leffel.

"Continuous soybeans not only increase the weed and disease problems, but the soil structure is gradually broken down," said Edward Strickling, University of Maryland soil physicist.

"Fertilizer applications should be 300 pounds of 0-20-20 to 500 pounds of 3-12-12 broadcast before seeding, depending on the soil test," said James Miller, University agronomist.

Paul Santlemann outlined a weed control program for soybean growers in Maryland. He said: "Prepare the soil and let it stand 1 week; then prepare it again; plant the soybeans and just as the soybeans are coming up, use the rotary hoe."

If chemicals must be used to control weeds in soybeans, a pre-emergence application of DNBP at the manufacturer's recommended rate will control annual grasses and broadleaf weeds. "Some injuries may result if heavy rains come immediately after spraying," warns Dr. Santlemann.

No Advantage for Narrow Rows at Delta Station

REPORTS OF THE importance of narrow rows for producing top soybean yields in the North Central States have stimulated questions on the use of narrow rows in the Delta area of Mississippi.

Studies at the Delta Station in 1949 and 1950 showed no yield differences between soybeans grown in 36-inch and 40-inch rows, but yields were reduced as much as 10% when row widths of 24 to 28 inches were used, according to E. E. Hartwig, research agronomist, Delta Branch Experiment Station, Stoneville, Miss. From these results, it was concluded

benefits could not be expected from setting up special equipment for planting and cultivating soybeans in row widths different from those commonly used for other row crops in the area.

Additional studies were made in 1960 to compare 40-inch with 27-inch rows, since varieties used in the earlier studies were no longer being grown. The Hill and Lee varieties were used in the 1960 study and no significant yield differences were found between the two row widths.

Ideal Weather Not Same For Corn and Soybeans

THE WEATHER pattern that produces top yields in corn and soybeans is not the same under Illinois conditions, reports R. T. Odell, University of Illinois soil scientist.

Following a study of corn and soybean yields and weather records over a 50-year period, Odell says that cooler-than-average temperatures during July and early August help to produce high corn and soybean yields.

Below-normal rainfall is desirable from planting time to mid-June for corn and throughout June for soy-

beans. Both corn and soybeans thrive on abundant rainfall during July when these crops are growing rapidly, especially in late July when corn is tasseling and soybeans are blooming.

From Aug. 1 until mid-September, above-average rainfall has opposite effects on corn and soybeans. If it comes during the first half of August, it increases corn yields, but slightly reduces the yields of soybeans, which are usually in the early pod stage at that time. From mid-August to nearly mid-September, however, above-average rainfall increases soybean yields but decreases corn yields.

After mid-September, below-normal rainfall is desirable for both corn and soybeans.

Another Iowa Soybean Yield Contest in '61

AN IOWA MASTER soybean growers contest will be conducted again in 1961, states Oliver A. Knott, educational director for the Iowa Crop Improvement Association, Ames. Dr. Knott has made a call for sponsoring organizations for local contests.

The state will be divided into four

sections from north to south this year, with a champion and runnerup in each section receiving \$100 and \$25 respectively. A trophy and plaques will go to the three top winners in the state.

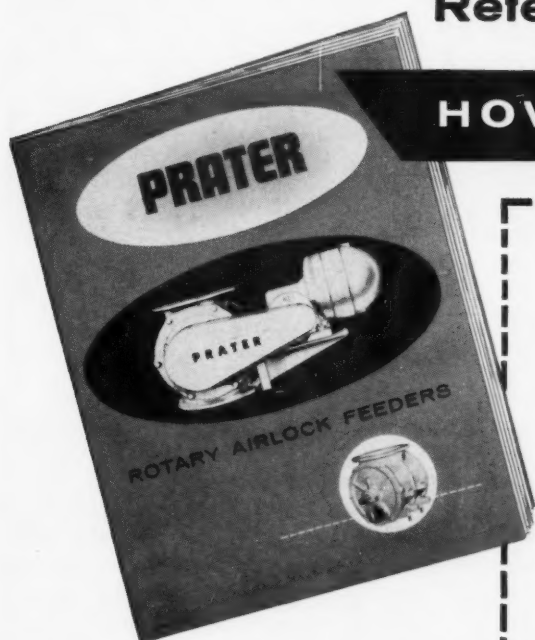
The Iowa Crop Improvement Association has sponsored a state soybean yield contest each year since 1941, except for 1945 when no contest was held. The alltime high yield in the Iowa contests was made by Molgaard Bros. of Dallas County in 1952. Their average yield was 60.78 bushels per acre. M. E. Dillon of Keokuk County had a yield of 60.25, almost as high, in 1959.

Don't Recommend Soybeans After Wheat in Kansas

PLANTING soybeans following wheat harvest is not recommended for any part of Kansas because of the moisture hazard, according to E. L. Mader, associate professor, department of agronomy, Kansas State University.

Wheat will remove all of the subsoil moisture to a depth of 4 feet most years, thus making it necessary to produce a crop of soybeans entirely on current rainfall.

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1960 World Crop 977 Million Bu.

WORLD PRODUCTION of soybeans in 1960 is now estimated at 977 million bushels, 3% above the 1959 outturn and only slightly below the 1-billion-bushel record of 1958, according to Foreign Agricultural Service, U. S. Department of Agriculture. This estimate is 7 million bushels less than the first estimate.

The estimated 27-million-bushel increase from 1959 is attributed almost entirely to the larger U. S. crop; Mainland China's harvest probably approximated that of 1959. These two countries account for almost 95% of world production. Among the relatively smaller producing countries, increased output in Brazil, Colombia, and Taiwan was partially offset by smaller crops in Canada and Japan.

The U. S. harvest of 559 million bushels was 5% above the 1959 outturn but somewhat less than the record of 1958.

Canada's crop at 5.7 million bushels reflects a drop of one-sixth from the record outturn of the previous year—the first decline since 1956.

Information available on 1960 soybean production in Mainland China is not sufficiently reliable to warrant revision in the earlier unofficial estimate of 350 million bushels, the same as the estimate of the 1959 crop.

Mainland China in 1960 seems to have had its second bad crop year in succession. However, despite repeated reports of drought and floods in 1960, the extent to which the damage in the soybean producing areas differed from that of 1959 is not clear.

In view of the export importance of soybeans and the unsatisfactory internal supply of cooking oils and protein foods, Communist China probably will strive to maintain soybean acreage at around the 24-million-acre level this year. However, current official policy is to make grain production the "central task" of agriculture; there is, therefore, some possibility of an overall oilseed acreage decline which soybean acreage might share to a small degree.

Over the long run, and in the circumstances in which Mainland China finds itself, pressures for the expansion of grain acreage will impose relatively inflexible limits on the possibilities for expansion of oilseed acreage, including soybeans.

The 1960 soybean crop in the Soviet Union probably did not vary greatly from the 8.2 million bushels produced from 1.1 million acres in 1959. Production of soybeans is being encouraged because of the increased importance of their use for feed in the drive to increase meat production. To supplement domestic production the Soviet Union in recent years has imported annually about 20 million bushels of soybeans from Communist China.

Continuing the upward trend of recent years, Brazil's 1960 soybean crop, estimated unofficially at 7.1 million bushels, was one-third larger than the previous year because of the sharp acreage expansion.

The 1961 crop, harvested from February through May, is expected to approximate 9.6 million bushels. The estimated 30% increase in planted area this year, stimulated by high soybean prices in 1960 and encouragement from processors, took place on diverted wheat lands in Rio Grande do Sul, where over 90% of the Brazilian soybeans is grown.

Japan produced 15.3 million bush-

els of soybeans in 1960, slightly less than a year earlier. A further decline to 730,000 acres is expected in 1961. With average yields, production in 1961 will be about 13.5 million bushels—the smallest crop since 1949.

Indonesia's soybean crop, estimated at 14.7 million bushels, was about the same as in 1959. The crop is produced mainly for soy sauce and bean curds.

In Colombia output rose from a half million bushels in 1959 to almost a million bushels in 1960.

World Flaxseed Production up

WORLD FLAXSEED production in 1960 is estimated at 130 million bushels, 8 million bushels or 7% more than in 1959 and almost one-fifth larger than the 1950-54 average, the U. S. Department of Agriculture reports.

The estimated gain is mainly the result of increases in the United States and Canada, which were partially offset by a decline in Argentina and India.

SOYBEANS: ACREAGE AND PRODUCTION IN SPECIFIED COUNTRIES AND THE WORLD, AVERAGE 1950-54, ANNUAL 1959 AND 1960¹

	Acreage ²			Production		
	Average 1950-54	1959	1960 ³	Average 1950-54	1959	1960 ³
North America:						
Canada	188	251	256	4,131	6,828	5,675
Mexico .....	.....	4	25	.....	110	367
United States ⁵	14,747	22,487	23,516	298,422	533,175	558,778
South America:						
Argentina	2	2	2	30	29	29
Brazil	4 157	277	404	4 3,471	5,392	7,130
Colombia .....	.....	27	49	.....	514	919
Europe:						
Italy	2	1	.....	34	19	17
Rumania	55	56	.....	378	.....	.....
Yugoslavia	12	25	44	90	617	735
Other Europe (excl. U.S.S.R.)	20	10	10	105	60	60
U.S.S.R. (Europe and Asia)	813	1,124	.....	4 4,825	8,231	.....
Africa:						
The Congo (formerly Belgian Congo) and Ruanda Urundi	9	15	17	69	147	147
Nigeria ⁶ .....	.....	.....	.....	250	135	.....
Asia:						
Turkey	8	17	16	104	165	193
China, Mainland	28,219	24,400	24,400	330,000	350,000	350,000
Cambodia	4 25	21	21	228	182	220
Indonesia	1,066	1,485	1,580	10,829	14,700	14,700
Japan	1,036	837	758	16,521	15,660	15,344
Korea, South	625	669	.....	4,835	5,070	.....
Taiwan	62	133	.....	576	1,633	1,840
Thailand	54	53	58	700	827	919
Total, excluding Rumania, "Other Europe," U.S.S.R., China Mainland, and North Korea ⁷	18,065	26,410	27,660	340,790	585,915	612,990
Estimated world total ⁷	47,875	52,700	53,995	681,095	949,625	976,850

¹Years shown refer to years of harvest. Southern Hemisphere crops which are harvested in the early part of the year are combined with those of the Northern Hemisphere harvested the latter part of the same year. ²Figures refer to harvested areas as far as possible. ³Preliminary. ⁴Less than 5 years. ⁵Acreage harvested for beans. ⁶Purchases for export. Local consumption is small. ⁷Includes estimates for the above countries for which data are not available and for minor producing countries. Prepared or estimated on the basis of official statistics of foreign governments, other foreign source material, reports of U. S. agricultural attaches and other U. S. representatives abroad, and related information. Pre-war estimates for countries having changed boundaries have been adjusted to conform to present boundaries, except as noted.



A MAJOR ADVANCE

Self-cleaning grain storage buildings by Butler

Here's a completely new concept in grain storage buildings. It was developed by Butler grain storage experts to help grain men store and handle grain more profitably than ever before. It's the all-new Butler building—the first completely self-cleaning grain storage building.

A new horizontally corrugated wall panel—designed specifically for grain storage—makes this possible. It's completely self-cleaning. This new panel has a 43° slope corrugation. Grain can't get hung-up on it. And, the panel is so strong that it can be attached directly to

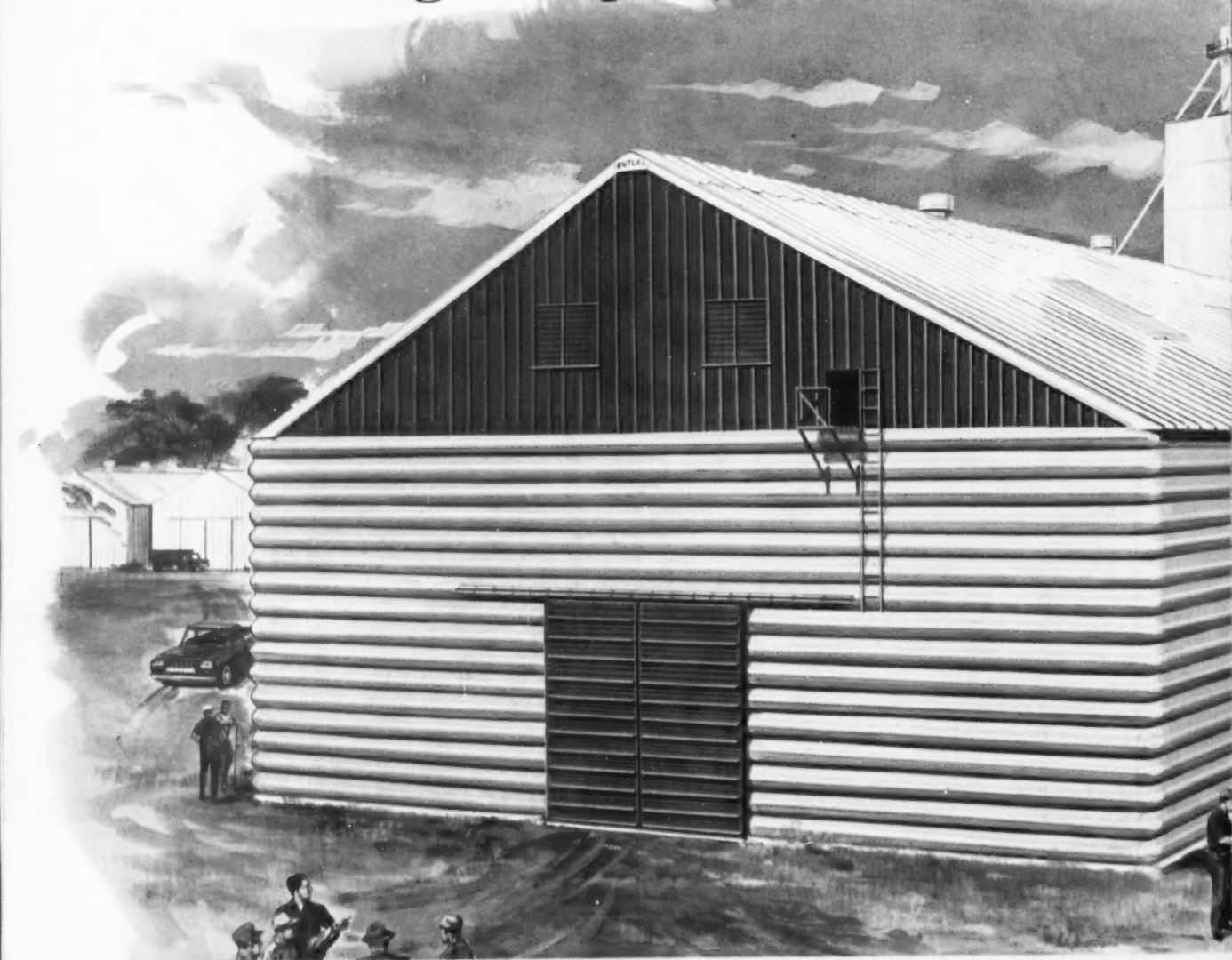
the rigid frames. Sidewall girts are eliminated. There's nothing to trap or hold grain. Even building corners are rounded to assure self-cleaning.

This all-new Butler grain storage building not only enables you to cut grain handling costs to the bone, but it brings you far safer, more profitable storage at a new low cost-per-bushel-stored, too. The all-new roof provides greater weather protection. And, it has a steep pitch. Now you can peak your grain for greater storage capacity and still have room for overhead augers and walkways.



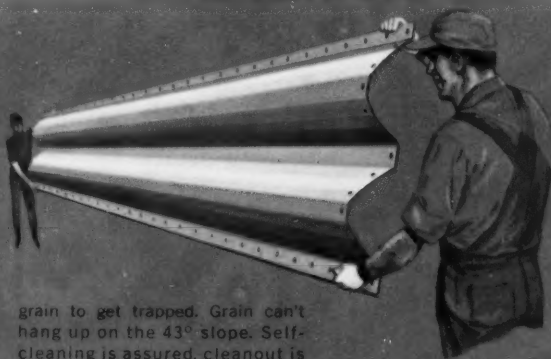
THE ALL-NEW BUTLER GRAIN

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**NEW, BIGGER,
STRONGER...
SELF-CLEANING
GRAIN STORAGE
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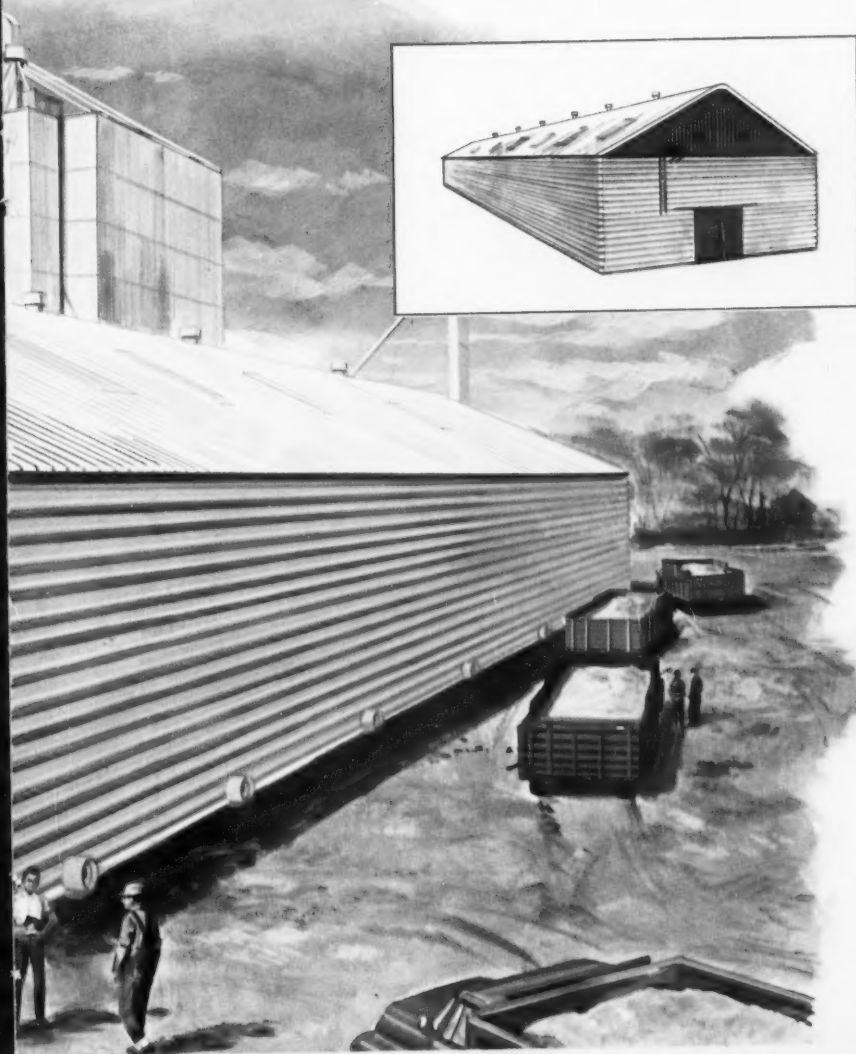
These new panels have two unique features: size and shape. Each panel covers 60 square feet (3' x 20'). This means far fewer laps in your building, fewer spots where trouble could occur. And every vertical joint is covered with a batten strip and weather protected by a special sealing compound. Grain can't leak out. Weather can't get in. The deep corrugations make each panel so strong that no girts are required. The danger of breakout is eliminated, there is no place for



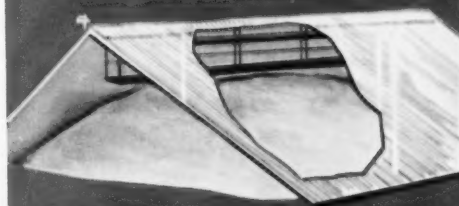
grain to get trapped. Grain can't hang up on the 43° slope. Self-cleaning is assured, cleanout is complete.

STORAGE BUILDING

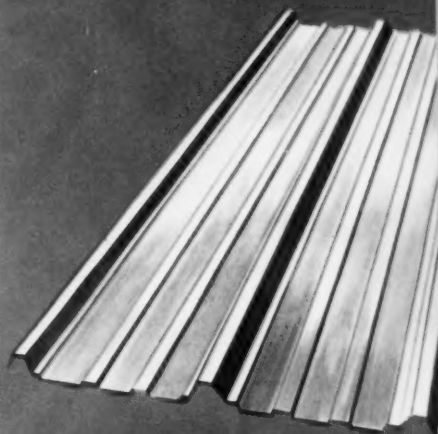
more profitable storage



ALL-NEW ROOF
...in Color Too!



This new, steep 6-in-12 pitch roof, permits maximum filling of building, yet provides extra room for overhead augers and walkways... makes inspection easy. And Butler's rugged structural frame is designed to take the extra load of the walkway and a fully loaded auger, without special bracing.

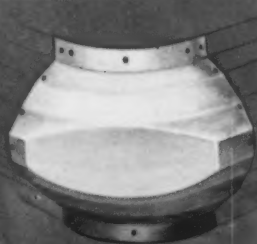


A new roll formed pattern gives Butlerib® roof panels greater strength and rigidity. This means less deflection under wind or snow loads. The result—the most weathertight cover ever developed. This new panel, a full 3 feet wide, comes in lengths up to 32 feet. It goes up fast, with fewer laps for greater weather protection, greater rigidity.

As an extra feature, this outstanding roof is standard in factory-applied Butler-Tone white—on both sides. This finish reflects heat to keep grain cooler... resists weathering to keep your building looking new. The white underside makes for a brighter interior... better inspection.



Specially formed gable trim panels seal out wind, weather and pests. Factory-applied Butler-Tone™ finish, gives your Butler grain storage building new eye-appeal.



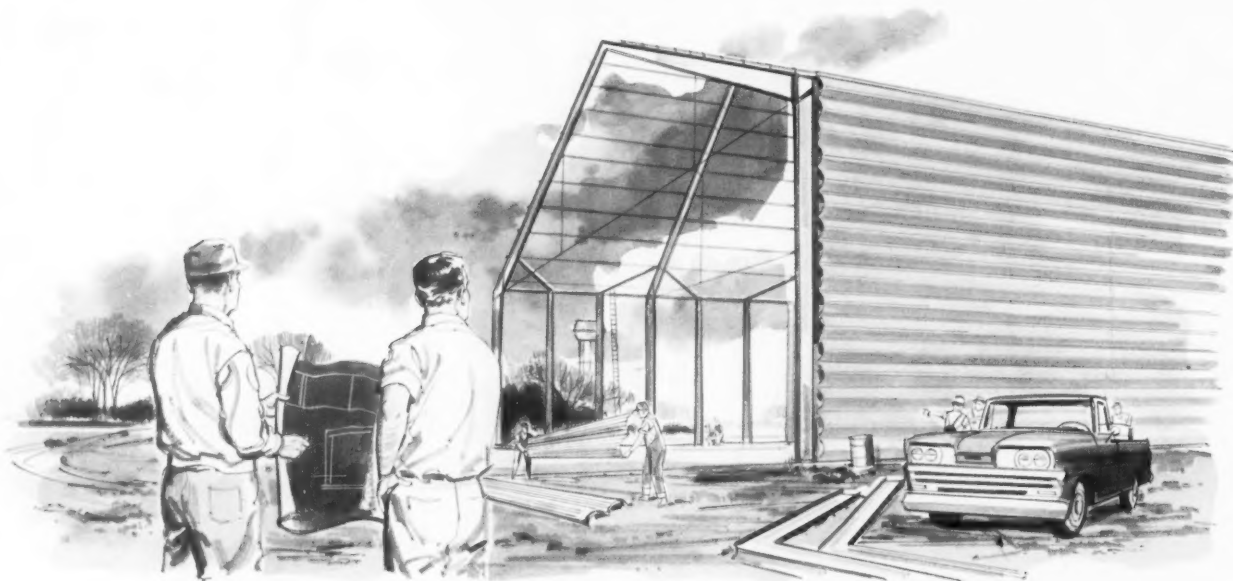
Grain can't get caught in the corners of this building—they're rounded. This new, deep drawn, wrap-around corner assures self-cleaning. Grain can't leak out.

For safest flat storage at lowest cost-per-bushel stored...see your *Butler Builder*

Your Butler Builder is a specialist in planning and building flat storage. He knows the special construction problems and storage requirements in your area. He knows labor practices, material availability and other factors that can influence the cost of construction.

With this knowledge and experience...plus this new

Butler grain storage building, he can give you the finest, safest, most dependable storage ever. And, he can do it at the lowest cost-per-bushel stored, for more profitable storage. Whether you plan to build new facilities or expand your present facilities, call him in — get full details on the new Butler grain building.



New wide range of sizes and accessories to fit every need

There's practically no limit to the capacity you can build with this new Butler grain storage building. 50,000 bushels, 100,000 or a 1,000,000 bushels—we'll make them as big or as small as you need. Butler offers the world's largest selection of building widths, side-wall heights and, of course, unlimited building lengths. Partitions are a snap to install to make small capacity bins for grain separation by kind or grade. And, like all Butler buildings, these new grain storage buildings

grow with your needs. If you require more space, you can add on as you need it quickly, economically.

Need aeration? Butler can supply a complete system. Specially designed to fit each building, Butler aeration systems assure even air distribution, efficient aeration at lowest operating costs. Large sliding doors for end or sidewalls, gable access doors, roof fill openings, adjustable weather and bird-tight louvers as well as roof ventilators are also available.



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SOYBEAN COUNCIL OF AMERICA, INC.



SOYBEAN COUNCIL'S exhibit at the Seville, Spain, trade fair is in the background, with Gonzalo Rivera in charge. In the foreground are General Gonzalez Gallarza, president of the fair, and Cardinal Bueno Monreal, the civil governor of Seville.

First Fair at Seville

THE SOYBEAN Council exhibit with Gonzalo Rivera in charge was among 600 exhibits at the first Ibero-American Trade Fair held at Seville, Spain, Apr. 10-May 1. The Council's stand was erected just outside the main pavilion where nobody could possibly miss seeing the soybean products on show.

The staff distributed information and pamphlets about soy products and answered the many inquiries about the utilization of soybean oil and meal.

The fair was officially opened by General Gonzalez Gallarza who represented the Chief of State. The trade fair was represented by professional people from every part of the world and by a large number of Spanish manufacturers, farmers and industrialists.

The fair followed the soybean utilization seminar held at Seville in March.

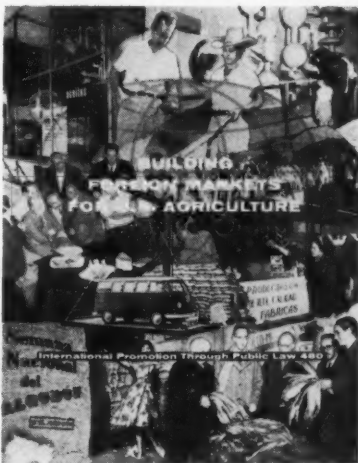
Export Booklet Issued By Commodity Groups

"MAINTAINING and expanding agricultural exports is vital to the prosperity of agriculture and the nation.

"Exports already provide an outlet for one of every six of our cultivated acres; markets for one-third

of our soybeans, tobacco, and lard; 40% of our cotton, wheat and tallow; over half of our rice; and rapidly increasing quantities of feed grains, poultry, dairy products, fruits and vegetables and other products," states a booklet recently issued by the Soybean Council and other commodity groups interested in the export market and conducting market development programs under P. L. 480.

Name of the booklet is, "Building



COVER of booklet on market programs.

Foreign Markets for U. S. Agriculture." A page is devoted to each separate commodity, including soybeans. Other commodities covered by the booklet are cotton, feed grains, poultry, tobacco, wheat, dairy products, hides and skins, livestock, rice and tallow.

"The value of U. S. agricultural exports reached \$4.8 billion in 1960, an all-time high, and accounted for one-fourth of all U. S. exports," states the booklet.

Edible Fat Seminar Was Held at Cairo, Egypt

THE FIRST seminar on edible fats and oils was held in Cairo, Egypt, in April, beginning Apr. 16, with experts from the United States, Spain and Turkey participating.

The seminar, which was sponsored by the Soybean Council, helped to further introduce soybeans to Egypt and reviewed the fats and oils situation.

H. E. Sayed Marei, Egyptian minister of agriculture, opened the seminar.

Kamal Ramzi Stino, minister of supply, talked on the ministry's policy for fats and oils in the U.A.R.

HARTZ

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Paris Fair Puts Program Into High Gear in France

By **JUAN G. DE MADARIAGA**
Assistant to the Director for Foreign Operations, Soybean Council of America

THE SOYBEAN Council's market development program has gone into high gear in France lately. Recent events include:

The Soybean Council stand at the Paris Agricultural Fair Mar. 7-13.

The animal nutrition conference held in cooperation with the French Society of Animal Science Apr. 18-19. Mr. Leroy, president of the Society, accepted the presidency of the conference, and there were scientists from Switzerland, Great Britain, Italy and the United States at the conference. The conference, held at the new UNESCO building in Paris, was devoted to the protein requirements of domestic animals.

A congress of feed industry federations of the Common Market countries supported by the French Federation of Mixed Feed Manufacturers Apr. 20-21.

The Council's exhibit at the Paris fair concentrated on U. S. soybean meal, as the fair was largely addressed to livestock farmers and mixed feed manufacturers. Visitors from all over France and many European countries requested information on prices and quality of U. S. soybean meal.

France is potentially a large customer for U. S. soybean meal. The country's present production of mixed feeds—2 million metric tons—is sure to be increased in years to come. Fifty-five percent of the total mixed feed production in France

goes to poultry and there is a large potential consumption by swine and dairy and beef cattle.

This past year's consumption of soybean meal by France was 150,000 metric tons, the highest ever registered. Prospects are excellent for an increase in consumption of soybean meal, particularly U. S. meal, since French consumers are just now becoming informed about the quality and advantage of this product.

A puppet show at the Council's booth, with a farmer talking to different animals about their protein requirements, was very successful.

Seville, Spain, Seminar Drew Wide Attendance

THE FIRST SEMINAR ever held in Spain dealing exclusively with soybeans and soybean products attracted people from all over Spain and filled the meeting room at Seville, Mar. 21-23. Among those attending were government officials, people from the mixed feed and oil industries, and scientists.

Wide coverage was given to the meetings by the Spanish press and

The Soybean Council Around the World



In the Bombay, India, office of the Council, l to r: Franco Oddone, Council's administrative officer for foreign operations; Jake L. Krider, Central Soya vice president now on leave to the Council; Fred R. Marti, director of foreign operations; Howard L. Roach, president; Roy Sellers, U. S. Department of Agriculture agricultural officer; Louis H. Bean, noted economist now a Council consultant; and Ferroz H. Nallaseth, director for India.



Dale W. McMillen, Jr., president Central Soya, discusses the market development programs with Council's staff at Rome office. From left: Dominic J. Marcello, representative for Italy; Mr. McMillen; Fred R. Marti, director of foreign operations; and William A. Luykx, representative for the Netherlands.



Partial view of meeting hall at the soybean utilization seminar at Seville, Spain, Mar. 21-23. The seminar was organized by the Soybean Council in cooperation with the Institute of Fats at Seville, and was the first in Spain to deal exclusively with soybean products.



Dominic J. Marcello, Council representative for Italy (left) and Chester B. Biddle, the Council's official representative, at the 63rd International Agricultural Fair at Verona, Italy, (center) discuss soybean products with Hon. Amintore Fanfani, Italian Prime Minister, during his official visit to the Soybean Council exhibit.

SOYBEAN COUNCIL OF AMERICA, INC.

radio. The seminar was organized by the Soybean Council in collaboration with the Instituto de la Grasa of Seville. The Council had a small exhibit close to the meeting hall.

The sessions were opened by Javier de Salas, the Council's Spanish director, and Juan Martinez Moreno, director of the Institute. An address of welcome was given by Mayor Manuel Bono, and the Institute gave a reception for government officials, participants and attendants.

Speakers and their subjects included:

Gregorio Varela, University of Granada, "Basis for Planning the Consumption of Soya in Spain;" Ramon Lengaran, Comisaria de Abastecimientos y Transportes (General Supply Board), "Soy Flour as a Medium to Supply Man's Protein Necessities;" Elias Mario Palao, General Supply Board, "World Nutrition Problems;" D. W. McMillen, president, Central Soya, Fort Wayne, Ind., "The Significance of Soya Products in the American Nutrition Industry;" Felix Ramos, Fats and Oils Institute, "Soya Oil for Human and Industrial Use;" Rosalino de Castro, Fats and Oils Institute, "The Utilization of Soya Lecithin;" and Rafael Gutierrez Gonzalez Quijano,



Juan G. de Madariaga (left) at the Soybean Council stand at the Paris Agricultural Fair. Mr. Madariaga is in charge of the Council's program in France.

Fats and Oils Institute, "Preservation of Soy Oil."

There were visits to the Refining and Bulk Unloading Co. (EXISA) and to CATYD, one of the most important mixed feed plants in Spain, which was officially opened 2 weeks before the seminar.

Will Hold Nutrition Symposium at Lima

THE FIRST ANNUAL animal nutrition symposium will be held at the University of Lima, Peru, May 15-20, with both Peruvian and U. S. scientists participating. The symposium is being cooperatively sponsored by the Soybean Council and the department of zootechnology, College of Agriculture, University of Lima.

Council staff members who will participate in the symposium are Javier de Salas, Spanish director; and R. W. Fischer, assistant to the president, Waterloo, Iowa.

U. S. scientists who will lecture at the symposium are Virgil Hays, assistant professor of animal husbandry, Iowa State University; and J. A. Whatley, Jr., professor of animal husbandry, Oklahoma State University of Agriculture.

At the Cairo Fair

Council group at the Cairo, Egypt, International Fair. From left: Medhat Danial Youssef, counterpart narrator and assistant to J. Muentefering; J. Muentefering, assistant to the Council's director for foreign operations; Mrs. U. Kininmonth (Sonja Soya) the Council's food demonstrator; Mrs. Howard L. Roach; Howard L. Roach, Council president; Jake L. Krider, on leave to the Council from Central Soya; Mrs. J. L. Krider; A. Tawa, Council director for Egypt; and Miss P. Roach.



Sonja Soya passes out soya food samples at Cairo fair. Hon. John Duncan, U. S. Assistant Secretary of Agriculture (facing the camera), takes a sample.

PUBLICATIONS

Useful reports, circulars, articles; get them from the publishers, or from the Soybean Digest, Hudson, Iowa.

Bienville Tests Well At Baton Rouge, La.

THE PELICAN X OGDEN strains, including the Bienville, were most impressive in Agricultural Experiment Station tests at Baton Rouge in 1959, with the oil content around 22% or more and the seed yields

averaging around 35 bushels per acre.

The tests indicated adaptation of Bienville to northern and eastern Louisiana as well as the southern half of the state.

In tests over the last 4 years the Bienville compared favorably with the earlier varieties of Hood, Ogden,

and Lee, as well as with the Jackson and Roanoke varieties in seed yielding ability, oil content, height and spread of plant, lodging and shattering resistance, and in seed quality and viability.

Soybean Research, Baton Rouge, La., 1959. By John Gray. Report of Projects Department of Agronomy for 1959. Louisiana State University Agricultural Experiment Station, Baton Rouge, La.

Soybean Nematode in Japan Many Years

THE SOYBEAN cyst nematode has been known in Japan for many years, apparently since early in this century. There the nematode is known as moon night disease or yellow dwarf disease due to the appearance of the infected plants.

The nematode has also been reported in Korea and Manchuria but not elsewhere in Asia.

The soybean cyst nematode is comparatively easy to control but not to eradicate with moderate applications of standard nematocides, but the chemicals are too costly to be practical.

Some highly resistant varieties are known in Japan as well as Manchuria.

Studies on the Soybean Cyst Nematode. By M. Ichinohe. Plant Disease Reporter Supplement. Sept. 15, 1959. Vol. 260, pages 239-248.

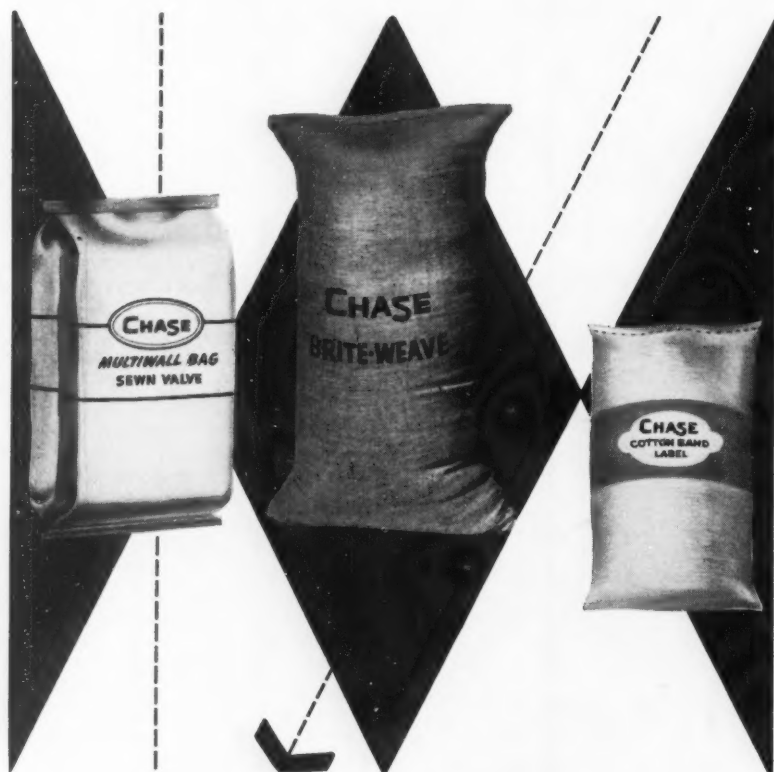
Highest Yields from Late May, Early June Plantings

HIGHEST SOYBEAN yields were generally obtained from late May or early June plantings in Virginia Agricultural Experiment Station tests using S-100 and Ogden varieties.

Late June and early July planting materially reduced yields of S-100 for all 4 years of the experiment, and produced lower yields of Ogden in 3 out of 4 years.

Double cropping with small grain and soybeans has become a common practice in recent years in Virginia. This necessitates very late planting, especially if wheat is used in the rotation.

The Effect of Date of Planting, Rate of Planting, and Width of Row on Two Soybean Varieties. Research Report 21. By H. M. Camper and T. J. Smith. Virginia Polytechnic Institute, Blacksburg, Va.



DEPENDABILITY IN BAGS FOR YOUR SOYBEAN MEAL

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PUBLICATIONS

UNICEF Grant Steps up Research on Soy Products

RESEARCH WORK on soybean food products is now being accelerated under a grant-in-aid from UNICEF by the department of food science and technology at Cornell University, according to D. B. Hand, head of the department.

The work is being concentrated along two principal lines.

The department is conducting pilot-plant experiments on the production of soybean milk with the hope of improving its yield and nutritive value.

And the second line of work is the production of tempeh, also on a pilot-plant scale, in order to develop a suitable semi-commercial process.

Tempeh is an Indonesian food produced by growing a mold on soybeans. The finished product is roasted, cooked in soup or fried in oil, and may also be sliced and dried. It has been suggested as a possible source of low-cost protein for child feeding programs in underdeveloped countries. But the product is not yet adapted to modern commercial methods necessary if tempeh is to play an important part in child feeding programs for the world.

The department has recently issued a publication dealing with the work done so far on tempeh.

Studies on Tempeh—an Indonesian Fermented Soybean Food. By M. I. Steinkraus, Yap Bwee Hwa, J. P. Van Buren, M. I. Provvidenti, and D. B. Hand. Journal Paper No. 1176, New York State Agricultural

Experiment Station, Cornell University, Geneva, N. Y. Reprinted from Food Research, 1960, Vol. 25, No. 6, pages 777-788.

Value of '58 Shipments From Oil Mills \$1 Billion

VALUE of all shipments from soybean oil mills totaled \$1,081 million in 1958, according to Bureau of the Census. Total capital expenditures by soybean processing plants in 1958 were \$14.6 million.

The total included shipments of primary products such as soybean oil, meal and lecithin valued at \$866 million; shipments of secondary products (mainly prepared animal feeds) at \$128 million; and miscellaneous receipts (chiefly resales) at about \$86 million.

Other industries shipping soybean oil mill products in 1958 consisted mainly of cottonseed oil mills, \$23 million; vegetable oil mills other than cottonseed and soybean oil mills, \$14 million; and shortening and cooking oils, \$13 million.

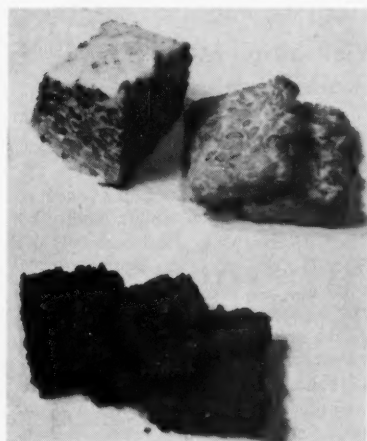
Total employees of soybean oil mills were 8,095 in 1958 compared with 6,922 in 1954. Total payroll was \$42 million in 1958 compared with \$29.4 million in 1954.

Mills processing soybeans full time totaled 117 in 1958, in addition to mills under other classifications processing soybeans part time.

U. S. Census of Manufacturers: 1958. Fats and Oils Industry report MC58(2)120H. Price 30¢. For sale by U. S. Government Printing Office, Washington 25, D. C., or any of the field offices of the U. S. Department of Commerce.

1960-61 Crop Varieties for Oklahoma. Approved for Certification and/or Recommended for Production in Oklahoma. By Ed Granstaff and Wesley Chaffin. Leaflet L-58. Oklahoma Agricultural Extension Service, Stillwater, Okla.

Hill, a New Early-Maturing Soybean Variety for Texas and Other Southern States. L-460. Texas Agricultural Experiment Station, College Station, Tex.



SAMPLES of tempeh.

INOCULATE SOY BEANS

with



IT PAYS!

The Urbana Laboratories
Urbana, Illinois

GRITS and FLAKES... from the World of Soy



—Photo courtesy
Eastern Feed Merchant

EXAMINING plans for the new Maryland soybean plant are Parker Bratten (left), general production superintendent, and Franklin Perdue, president, A. W. Perdue & Son.

Will Build Processing Plant at Salisbury, Md.

A. W. Perdue & Son Co., Salisbury, Md., major integrated broiler firm, has announced plans to build a solvent extraction plant which is

expected to process from 20% to 30% of Delmarva's soybean harvest, according to reports.

Construction of the plant was begun in mid-March and expected to be ready to operate in time for the 1961 soybean harvest, according to Franklin Perdue, company president.

"The reason for building this plant is basically to reduce the cost to produce a pound of broiler meat through a decrease in the cost of soybean oil meal," he said.

The plant is expected to use from 5,000 to 10,000 bushels of soybeans daily.

The Perdue feed mill will use slightly less than half of the soybean meal produced in the processing plant, officials indicated. Production beyond the firm's needs will depend on sales to other feed mills in the area.

One other soybean processing plant, Townsend's, Inc., Millsboro, Del., is in the Delmarva area; and Cargill, Inc., has a plant at Norfolk, Va.

The French Oil Mill Machinery Co., Piqua, Ohio, designed the Perdue plant and is supervising its construction. The project calls for a

push-button operation. The plant will employ from 10 to 20 additional employees.

General Mills Makes Two New Appointments

Two new appointments in the newly formed specialty products division of General Mills have been announced.

Walter E. Flumerfelt has been named director of marketing for oilseeds operations of the new division. William S. Mitchell has the new position of sales manager of industrial oils.

The recently announced specialty products division combines two former divisions, oilseeds and special commodities.

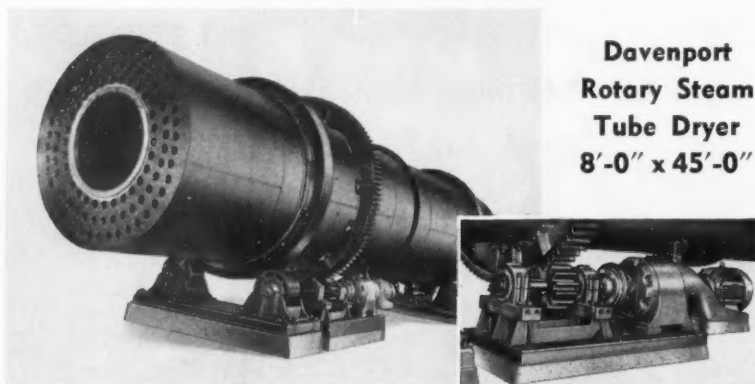
Mr. Flumerfelt joined General Mills in 1943 and managed the company's soybean processing plant at Belmond, Iowa, for 5 years before transferring to the Minneapolis general offices as manager of oil sales.

He will be responsible for overall marketing of products manufactured by the division's soybean plants at Belmond and Rossford, Ohio, as well as the safflower oil plant at Sidney, Nebr.

Mr. Mitchell joined General Mills in 1952 as a research technician. His most recent position was manager of technical oil sales for the oilseeds division. In his new position, he will be responsible for sales of refined and blown soybean oils, lecithin, and non-break and refined safflower oils.



Walter Flumerfelt



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Rotary Steam
Tube Dryer
8'-0" x 45'-0"**

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Vicksburg, Miss. Grain Terminal

A million-dollar grain terminal will be constructed on the Vicksburg industrial harbor site by the Norris Grain Co., St. Louis, according to an announcement made by Emmette Haining, chairman of the Warren County, Tenn., Port commission.

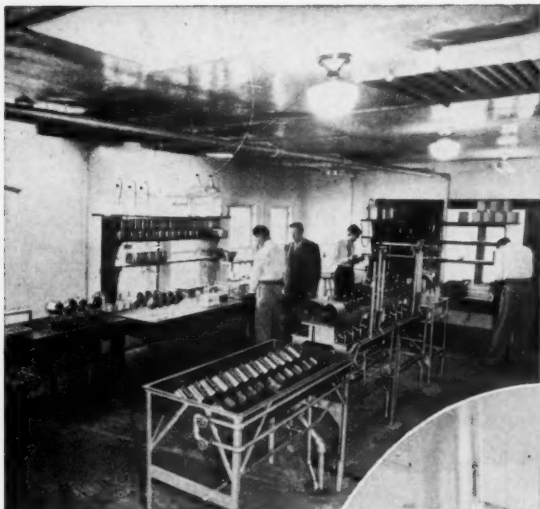
Announcement of the terminal marks the signing of the site's first industrial tenant.

Archer-Daniels-Midland Co., Minneapolis, will build a soybean processing plant on the Vicksburg harbor site, according to a Memphis newspaper report.

7

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7



Our Chicago laboratory is equipped with the most modern equipment for refining soybean oils; soybean products and feeds.

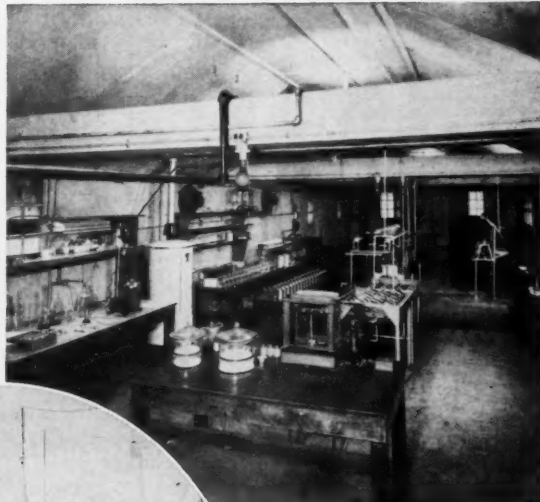
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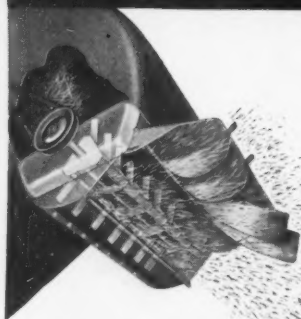
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Your tough-soybean-stalk problem can be turned into real benefits. A Hesston Straw Chopper shreds residue from your combine into easy-to-turn-under lengths, and spreads them evenly over the field as you harvest! The Hesston eliminates bunching... leaves fields ready for immediate plowing... in some cases even eliminates plowing... saves one or two diskings. Hesston-shredded straw decomposes quickly, returns nitrogen to soil, improves humus, helps soil retain moisture and resist erosion. The Hesston has more satisfied owners than any other straw chopper. The Hesston is ideal in small grains, down or windrowed crops, rice, flax, lespedeza, or weed-infested fields.

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GRITS AND FLAKES

Barker Is New Amsco Midwest Sales Manager

Thomas Barker has been appointed midwest sales manager of **American Mineral Spirits Co.**, it has been announced by Edward M. Toby, president.

Mr. Barker joined the company in 1950 as a sales representative in the



Thomas Barker

southern division, later becoming manager of the midsouth division. In 1956, he was transferred to Chicago as manager of Amsco's special products sales.

As midwest sales manager, he is responsible for the sales of Amsco's complete line of petroleum solvents, technical naphthas and waxes from western Pennsylvania to the Rockies and from western Canada to the Mexican border.

20th Anniversary for Ohio Valley Processors

The **Ohio Valley Soybean Cooperative**, Henderson, Ky., is celebrating its 20th anniversary. The cooperative was organized in 1940 by a group of farmers of some 10 counties in Kentucky and Indiana.



A. I. Reisz

Since the firm was organized soybean production has increased vastly in both Indiana and Kentucky. The firm operates a 135-ton-daily-capacity solvent extraction soybean processing unit at Henderson and has storage for 840,000 bushels of soybeans.

O. D. Keck is president and A. I. Reisz is manager of the firm.

Iowa Firm Enlarges Processing Plant

Boone Valley Cooperative Processing Association, Eagle Grove, Iowa, is enlarging its soybean processing plant from 260 tons to 400 tons per day, Keith M. Voight, general manager, announces. New equipment includes 750-horsepower Murray boiler, automatic bean scale, flaking and cracking rolls, meal screening equip-

ment, meal cooling equipment, continuous filling unit on extractor, condenser D-T entrainment separator, final oil stripper, wet grinder, and meal toaster.

Bralley Heads Research Division for A. E. Staley

Appointment of James A. Bralley as manager of the research and development division of the **A. E. Staley Manufacturing Co.**, Decatur, Ill., has been announced by the

Decatur corn, soybean and chemical processing concern. He succeeds Thomas L. Gresham, who is leaving the company.



James A. Bralley

Dr. Gresham will receive an honorary degree of doctor of science from Emory University June 5 in recognition of his contributions to science over a career spanning 29 years. Dr. Bralley has been with Staley's since July 1956, as director of research and head of the chemical research department.

Deam Purchasing Director For Capital City Products

The appointment of J. H. Deam as director of purchasing has been announced by **Capital City Products Co.**, Columbus, Ohio. In this capacity

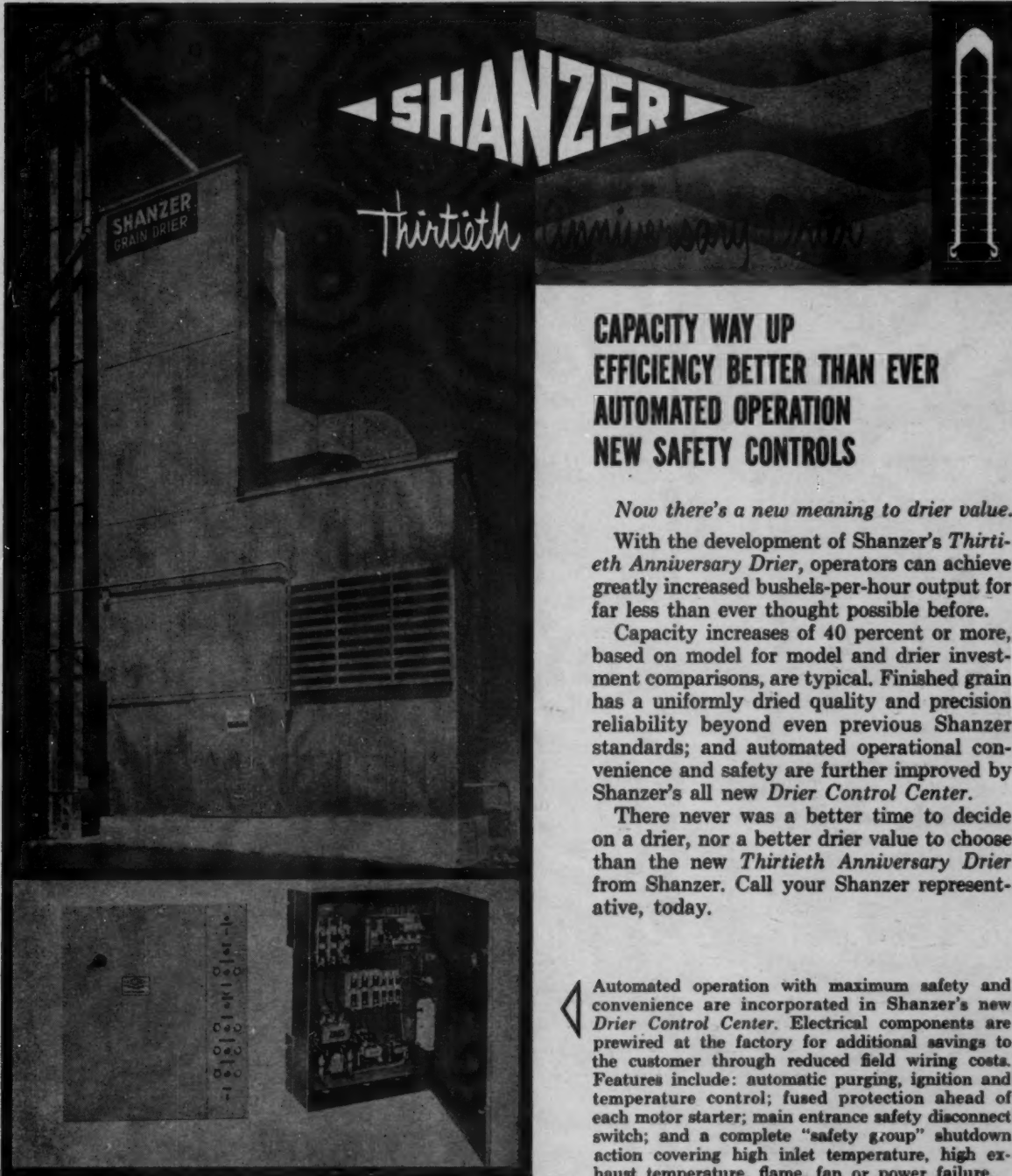


J. H. Deam

Mr. Deam will purchase oils and all ingredients and supplies used by the company.

He has had 20 years experience with Procter & Gamble, from which company he resigned as oil buyer.

Hideo Tokoro, who has been agricultural secretary in the **Japanese Embassy** in Washington, D. C., for the past several years, has returned to Japan where he will be connected with the Ministry of Agriculture and Forestry. Mr. Tokoro has become well known in the U. S. soybean industry and has attended two of the American Soybean Association conventions.



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Thirtieth Anniversary

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EFFICIENCY BETTER THAN EVER
AUTOMATED OPERATION
NEW SAFETY CONTROLS**

Now there's a new meaning to drier value.

With the development of Shanzer's *Thirtieth Anniversary Drier*, operators can achieve greatly increased bushels-per-hour output for far less than ever thought possible before.

Capacity increases of 40 percent or more, based on model for model and drier investment comparisons, are typical. Finished grain has a uniformly dried quality and precision reliability beyond even previous Shanzer standards; and automated operational convenience and safety are further improved by Shanzer's all new *Drier Control Center*.

There never was a better time to decide on a drier, nor a better drier value to choose than the new *Thirtieth Anniversary Drier* from Shanzer. Call your Shanzer representative, today.

Automated operation with maximum safety and convenience are incorporated in Shanzer's new *Drier Control Center*. Electrical components are prewired at the factory for additional savings to the customer through reduced field wiring costs. Features include: automatic purging, ignition and temperature control; fused protection ahead of each motor starter; main entrance safety disconnect switch; and a complete "safety group" shutdown action covering high inlet temperature, high exhaust temperature, flame, fan or power failure.

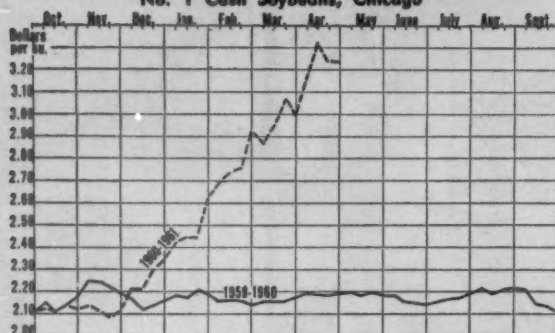
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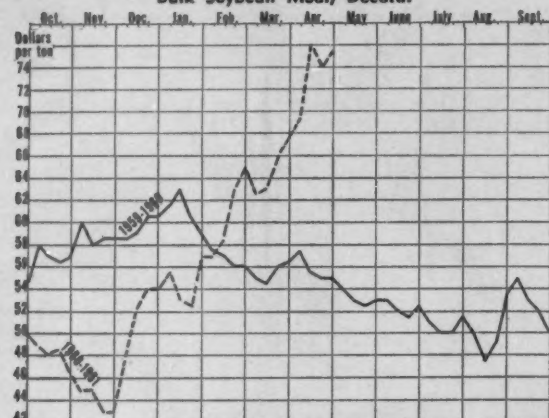
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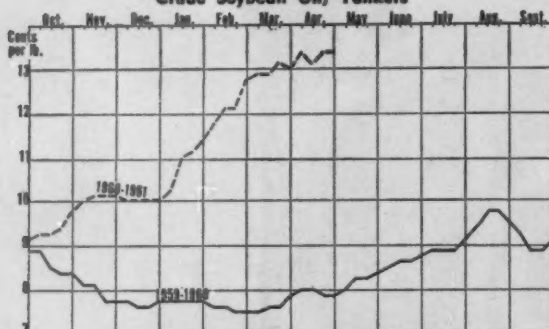
TRENDS AT A GLANCE (Weekly Close) No. 1 Cash Soybeans, Chicago



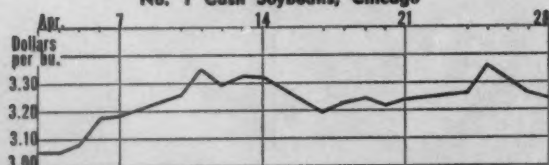
Bulk Soybean Meal, Decatur



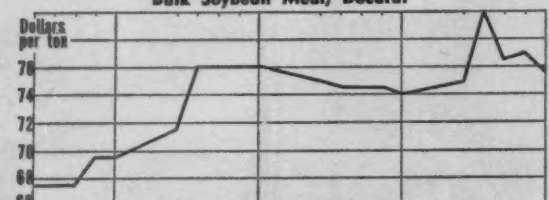
Crude Soybean Oil, Tankers



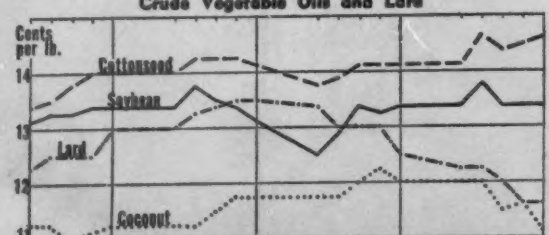
DAILY MARKET PRICES No. 1 Cash Soybeans, Chicago



Bulk Soybean Meal, Decatur



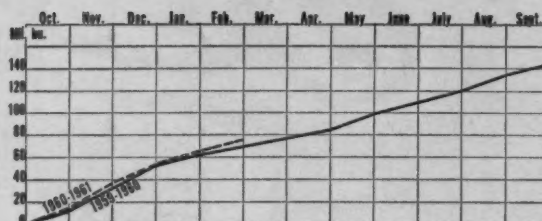
Crude Vegetable Oil and Lard



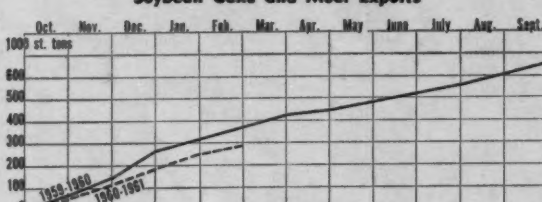
EXPORTS 1959-60 AND 1960-61

Cumulative year beginning Oct. 1

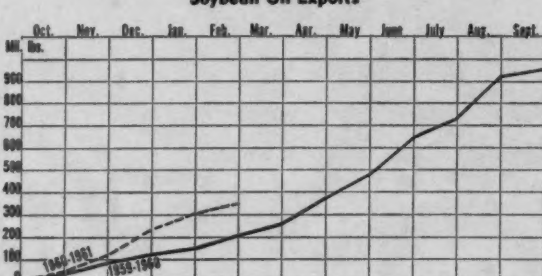
Soybean Exports



Soybean Cake and Meal Exports



Soybean Oil Exports



CASH PRICES, APRIL 1961*

	No. 1 yellow soybeans Chicago	Bulk soybean meal Decatur	Soybean oil Decatur	Cottonseed oil Mississippi Valley	Coconut oil Pacific Coast	Lard Chicago
Apr. 1 Saturday						
3	\$3.04 3/4	\$67.50	\$.13 1/8	\$.13 3/8	\$.11 1/4	\$.1275
4	3.05	67.50	.13 1/4	.13 1/2	.11 1/4	.1250
5	3.07 1/2	67.50	.13 1/4	.13 3/4	.11	.1250
6	3.17 1/4	69.50	.13 3/8	.14	.11 1/8	.1250
7	3.18	69.50	.13 3/8	.14	.11 1/4	.1300
8 Saturday						
10	3.25 1/4	71.50	.13 3/8	.14	.11 1/4	.1300
11	3.35	76.00	.13 3/4	.14 1/4	.11 1/4	.1325
12	3.29	76.00	.13 1/2	.14 1/4	.11 1/2	.1337
13	3.32 1/4	76.00	.13 3/8	.14 1/4	.11 3/4	.1350
14	3.32 1/4	76.00	.13 3/8	.14 1/8	.11 3/4	.1350
15 Saturday						
17	3.19	75.00	.12 1/2	.13 3/4	.11 3/4	.1337
18	3.22 1/2	74.50	.12 3/4	.13 3/8	.11 3/4	.1300
19	3.24	74.50	.13 3/8	.14 1/8	.12	.1300
20	3.21 3/4	74.50	.13 1/4	.14 1/8	.12 1/4	.1300
21	3.24	74.00	.13 3/8	.14 1/8	.12	.1250
22 Saturday						
24	3.25 3/4	75.00	.13 3/8	.14 1/8	.12	.1225
25	3.35 3/4	80.00	.13 3/4	.14 3/8	.12	.1225
26	3.30 3/4	76.50	.13 3/8	.14 3/8	.11 1/2	.1200
27	3.26 3/4	77.00	.13 3/8	.14 1/2	.11 5/8	.1162
28	3.23 1/2	75.50	.13 3/8	.14 3/8	.11 5/8	.1110
29 Saturday						

* From Wall Street Journal, Chicago.

1959 AND 1960 SOYBEAN CROPS

	1960	1959
Total soybeans placed under price support through Mar. 31	25,612,516 bu.	52,366,000 bu.
Loan repayments and deliveries through Mar. 31	18,577,452 bu.	3,592,000 bu.
Soybeans crushed Oct. 1-Mar. 31	217,670,000 bu.	204,487,000 bu.
Soybeans exported Oct. 1-Mar. 31	84,443,000 bu.	75,770,000 bu.
Balance on hand Apr. 1 for processing, export or carryover	244,874,000 bu.	276,035,000 bu.
Total soybeans inspected for overseas export plus lake shipments to Canada Oct. 1-Apr. 21	90,534,099 bu.	81,597,242 bu.

Where will all the soybeans go?...

Research holds the answer!

Rocketing soybean production raises a question:
How many bushels will there be a market for?

Aggressive research and marketing hold the answer! The market for soybeans will continue to grow only as we continue to create new uses and expand traditional uses for soybeans . . . and as we continue to promote these uses throughout the world. To these ends, ADM is dedicated.

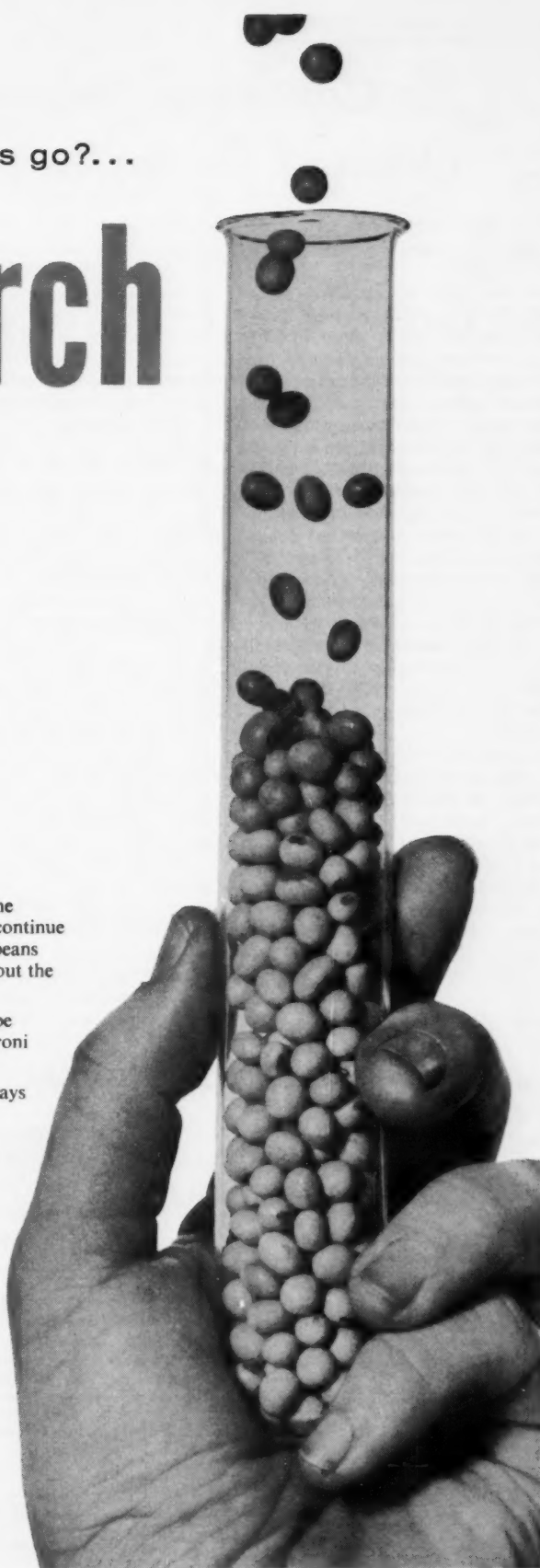
For example, ADM chemists have developed a new type of soy protein you'll soon be enjoying in breads, macaroni dishes, donuts, cereals and a hundred other foods.

This new development will be followed by more new ways to utilize soybeans. Count on ADM to continue its all-out effort to keep the soybean industry prosperous for those who grow soybeans and those who help process them into food and industrial products used in some way . . . everyday . . . by everyone.

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See Continued Strong Demand for Soybeans, Oil

THIS IS THE way it is seen by U. S. Department of Agriculture observers in Washington:

The short-term effects of the government's new price support program obviously mean more money for growers and bigger markets for both beans and their oil product.

Record prices the past season would have brought more plantings this spring regardless of the support level. And the price naturally would have dropped this fall in any case.

Growers plan to increase production by 2.1 million acres at least. (The trade looks for a larger increase. See summary of latest reports by *Soybean Digest* reporters on News in Brief page 11.) Production on the increase plus the 24.3 million acres of last year will now be assured of the \$2.30 floor per bushel as announced by Secretary Freeman.

Demand for both beans and oil are expected to remain strong despite the increase in acreage, the Administration believes. The increase of 45¢ in price support was designed to bring at least an increase of 300 million pounds of oil per year for the next 3 years. The 26.4 million acres planned for soybeans, as indicated by the Mar. 1 planting intentions report of USDA, are not enough to do the job.

Long-term implications, as USDA

experts see it, are that fats and oils are on a long-term uptrend. Demand for soybean oil would have slackened if the United States could not produce the increase needed. Other world producers of fats and oils would move in to fill the gap. Higher production now while U. S. exporters are in touch with markets is long-term insurance.

\$2 Billion for P. L. 480

A \$2 billion extra in P. L. 480 funds to be spent or committed by the end of this year easily rates as a big shot-in-the-arm for exports of farm commodities of all kinds. Grains, edible fats and oils and cotton are expected to feel the impact most.

President Kennedy will have signed a bill for this amount by the time you read this.

A rough idea of how edible fats and oils may figure in the new agreements is seen in the following breakdown of commodities programmed under Title I of P. L. 480 from 1954 through Dec. 31, 1960:

Edible fats and oils 4 billion pounds; wheat 1.4 million bushels; feed grains 288 million bushels; rice 49 million hundredweight; cotton 5.2 million bales; tobacco 298 million pounds; dairy products 278 million pounds; poultry 17 million pounds; dry edible beans 482,000 hundred-



By **GEORGE PETER**

Washington correspondent for the *Soybean Digest*

weight; fruits and vegetables 184 million pounds; and meat 113 million.

The cottonseed oil and/or soybean oil share of P. L. 480 exports for the duration of the program has been \$540.6 million, or over half a billion, of the total market value of \$4.6 billion for all the commodities exported under the program. But in the latter years of the program, fats' and oils' share has been on the increase.

Actual effect of \$2 billion more is not likely to be the full amount over the value of last year's P. L. 480 exports, however. It does mean you can count on authorizations greater than last year's. There is some overlapping. Part of the additional authorization needed is to make up for the gap created by last year's agreement with India which committed \$2.2 billion of the \$3 billion available for the calendar years 1960 and 1961. Smaller agreements added left USDA with about \$250 million to underwrite the 1961 P. L. 480 program.

A net gain of over half a billion dollars in exports for this year's operation of the program seems certain, however.

Ready to Go

USDA is all set to go. There will be little, if any time lag necessary. Negotiations for about \$1.3 billion of the needed additional authorization were already in various stages of negotiations with the affected importing countries while USDA was asking Congress for approval.

On the bullish side, USDA also sees the remaining balance of the \$2 billion to be used up for programs believed ready for signature in a few months. Owing to poor yields abroad for wheat and other commodities, a number of countries are making bigger requests for Title I programs.

Longer-term agreements, meaning greater insurance for future exports, will be emphasized. A 4-year agreement with Pakistan similar to that made with India has been under ne-

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gotiation for some time and will be announced shortly. Hundreds of millions of dollars all told are involved in such programs.

Bigger sales is the idea behind longer-term agreements. Food deficit countries like most buyers anywhere are more likely to buy from the United States if they can count on steady supplies. Procurement and shipment over longer periods can be carried out more effectively and geared to facilities to receive, store and distribute. Imports can be coordinated with local production easier.

Offsetting some of the bullish aspects of stepped-up P. L. 480 authorizations is this factor. While the increased authority to enter agreements under the program is charged against this year's authorization, the actual exports and sales cannot be expected to be all completed in the remaining 8 months of this year.

Total Oil Exports

USDA is holding to its estimate of 1.5 billion pounds of edible oil exports for the 1960-61 season. Contrary to some trade reports, estimates are more likely to be raised—say, closer to something like 1.6 or 1.7 billion pounds.

The apparent delay by Congress in approving additional funds for P. L. 480 isn't calculated to affect USDA's 1.5-billion-pound estimate which was made earlier. Congress had been kept fully informed and USDA went ahead with negotiations in advance.

Record-tight supplies in the United States and limited supplies in other countries are behind USDA's reasoning. Western Europe and Japan, major importers, continue to need big supplies of oils and oilseeds. Red China's soybean exports are lagging behind last year's more than 50 million bushels.

Price Outlook

How high is high? The price of No. 1 yellow soybeans, Chicago, was \$3.35 in mid-April. Will there be a downslide? USDA says conservatively the supply situation will tighten even more.

Bean oil wholesale prices later in the marketing year might be a different matter, however. USDA expects them to stay relatively stable this spring and summer—but at the new higher level. Any new factors likely to change this prospect would be mainly the size of prospective supplies coming up and the export outlook this fall.

President Kennedy's request for an extension of P. L. 480 after this year is considered sure-fire. Whether

he will get, as he wants, a 5-year extension through December 1966 is less certain. Most conservative estimates grant him at least a 2-year extension with the probabilities of a 3-year extension.

Title I provisions call for an advance approval for \$7.5 billion with a limit of \$2.5 billion for any one

calendar year. A Food for Peace provision would give the President authority, up to now exercised by the Secretary of Agriculture, to determine nations with whom agreements would be negotiated. This would make P. L. 480 programs more directly an instrument of national and international policy.

USDA'S ANNOUNCEMENT ON

Soybean Support Program

THE U. S. DEPARTMENT of Agriculture has announced dates and other general provisions for price support operations on 1961-crop soybeans.

Support prices for the crop were announced Mar. 22 at a national average of \$2.30 per bushel. The soybean support price was increased 45¢ from the level in 1960 to gear production of this important oil crop into the 1961 feed grain program and to meet anticipated needs.

Soybeans must grade No. 4 or better and contain not more than 14% moisture to be eligible for support. They must also be in adequate storage. In addition, soybeans to be eligible for 1961 support must be grown on farms where 1959-60 average acreage of conserving and idle land has been maintained. This requirement is designed to insure that

increases in soybean production will come from acreage that has been used for crops that are in abundant supply such as wheat, cotton, corn, grain sorghums and other feed crops rather than from land now in conserving uses or idle.

As in the past, soybeans in all areas will be supported through farm and warehouse-stored loans and purchase agreements.

Loans and purchase agreements on soybeans will be available from harvest-time through Jan. 31, 1962.

Maturity dates for soybean loans on the 1961 crop will be May 31, 1962.

County support rates for soybeans, with premiums and discounts for grade and quality differences, will be announced later.

Support prices for 1960 production were set at \$1.85 per bushel.

- MARKET STREET -

We invite the readers of THE SOYBEAN DIGEST to use MARKET STREET for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here. Rate 10¢ per word per issue. Minimum insertion \$2.00.

PRATER 75 H.P. DUAL SCREEN PULVERIZER. Also 100-lb. Richardson meal scale and Union Special 12-inch belt sewing machine. Ray L. Jones, 1923 Hayseaton Drive, Jefferson City, Mo.

FOR SALE—WHIZZER BAGGING CONVEYORS, Richardson scales, Union Special, Fischbein sewing heads, 1- to 7-ton square bins, welded spouting and elbows. Winborn Mill Equipment Service, Williamsburg, Iowa.

MODERN REBUILT GUARANTEED ANDERSON & FRENCH SCREW PRESSES FOR SPECIFIC OIL SEEDS PITTOCK & ASSOCIATES GLEN RIDDLE, PA.

FOR SALE—ANDERSON EXPELLERS and French screw presses, cookers, drivers, 5-high, 48-inch crushing rolls, 36-inch attrition mills, sewing machines, hammermills, cracking rolls, filter presses. Ray L. Jones, 1923 Hayseaton Drive, Jefferson City, Mo.

WE MANUFACTURE STEEL ELEVATOR legs, screw conveyors, pit screws, valves, elbows, piping, collectors, enclosed distributors, etc. Write for catalog and prices. Creamer Sheet Metal Products, London, Ohio.

MISSISSIPPI CERTIFIED HILL, REBEL, Jackson. Also Mississippi registered Gulfrose seed rice. All of these quality seed air dried, low moisture, high germination. Bard Selden, Tunica, Miss.

WANTED TO BUY—FH-542 CRIPPEN seed cleaner or like cleaner. Henry Trapp, Hastings, Minn.

FOR SALE—MOST VARIETIES OF SOY- beans, certified and noncertified. Huey Seed Co., Carthage, Ill. Phone 650 or 651.

STEEL STORAGE TANKS: 10—30' DIA. X 30', 160,000 gals.; 2—28' dia. x 19'6", 90,000 gals.; 2—24' dia. x 20', 65,000 gals.; 7—18' dia. x 30', 55,000 gals.; 4—15'6" dia. x 16'1", 22,500 gals. H. Loeb & Son, 4643 Lancaster Ave., Philadelphia 31, Pa.

FOR SALE—18,000 BU. CERTIFIED Clarks, 20,000 bu. selected Clarks, black and brown hay beans. Jones Farm Store & Elevator Co., Ridgway, Ill. Phone CRestview 2-4861.

FOR SALE—SOYBEANS—CERTIFIED Blue Tag Hill, 900 bu. Nick Bruckerhoff, St. Mary's Mo. Ph. Linden 3-2287.

FOR SALE—2 PORTABLE GRAIN cleaners, both powered with 2 cyl. Wisconsin gas engines. 92 S Clipper trailer, in very good shape, ready to go. 2131 Carter Disc in good shape, ready to go. I made this one portable on 4-wheel trailer. Harold Dondlinger, Hitchland, Tex. Phone FI 7-2610 Gruver, Tex.

FOR SALE—2,000 BU. BLACK WILSON Bright plump beans, \$2.50 per bu. bulk here. C. Stanley Short, Jr., Dover, Del.

Sees Indian Oil Famine.

AN EDIBLE oil famine in India during the third 5-year plan which ends in 1966, with imports of edible oils from the United States under P. L. 480 as the only way out, is predicted by the Economic Times, Bombay.

"There is a very strong feeling growing in the country—and this feeling is based on statistics—that unless the government plans to import large quantities of edible oils under P. L. 480, an extreme scarcity of edible oils will be felt toward the close of the third plan," states the Economic Times.

The government of India made its first purchase of soybean oil—3,000 metric tons—from the United States in March.

France. In France, disappearance of oilseed cake and meal declined from 791,000 metric tons in 1959 to 718,000 metric tons in 1960 but remained above the 1958 667,000-metric ton level, the U. S. Department of Agriculture reports.

Production of oilseed meals, almost all from imported oilseeds, reached a record 518,000 metric tons in 1960, 13% higher than the year before. Imports of soybeans in 1960 reached a record 195,567 metric tons (7.2 million bushels), 92% of which were from the United States.

Ontario. Soybean imports into Canada were 15,208,578 bushels in 1960, up over 2 million bushels from 13,173,357 bushels in 1959, the On-

tario Soya-Bean Growers Marketing Board reports. Exports of soybeans also increased in 1960, from 1,965,767 bushels to 2,215,804 bushels.

Soybean oil imports were also higher in 1960, by an equivalent of one-half million bushels of soybeans, but meal imports declined by an equivalent of over 2 million bushels.

Denmark. Denmark imported 13.4 million bushels of soybeans in 1960—8.8 million from the United States and 4.6 million from China, the U. S. Department of Agriculture reports.

This quantity was an increase of one-fourth over 1959 when takings totaled 10.6 million bushels—6.2 million from the United States and 4.4 from Canada.

Practically all the beans were crushed in two Danish oil mills.

Rhodesia-Nyasaland. Commercial oilseed production in the Federation of Rhodesia and Nyasaland is expected to reach 61,050 short tons, one-sixth larger than in 1960, which in turn was a third larger than in 1959, according to the U. S. Department of Agriculture. Oil production, consisting primarily of peanut oil, is expected to increase from the previous 2 years to about 12,000 tons, due to the larger size of the peanut crop.

Burma. Peanut production in Burma, a project to which the government gives high priority, will probably decline to 265,000 short tons from a harvested acreage of almost

1.1 million in 1960-61, or about one-fourth less than the 1959-60 crop of 302,340 tons from 1,052,000 acres. The decline from the previous year, due to adverse weather, diseases, insects, and pests, is in spite of the government's drive for self-sufficiency in edible oils.

USDA Releases Study On World Food Gap

THE U. S. DEPARTMENT of Agriculture released on Apr. 20 the results of a study on the "world food gap," which shows the amount of food needed to provide a minimum healthful, balanced diet for the world's people.

Total calories and proteins are very low for the population of western Asia, Africa, the Far East, Mainland China and large parts of Latin America. The study shows the greatest shortages to be in protein foods, particularly in the Far East, Mainland China, and Africa.

Propose Processing Plant for Italy

U. S. PARTICIPATION is invited to undertake cultivation of soybeans in the Provinces of Ravenna, Forli, Ferrara, and Rovigo, Italy, for extraction of oil and in establishing a plant for production of soybean cakes and flour, according to the U. S. Department of Commerce. Market potentials are said to be good.

Ditta Pietro Farina, promoter of the project, offers to provide land for industrial cultivation of soybeans and to be of assistance to the potential investors.

Paul C. Hughes, Farmers Soybean Corp., Blytheville, Ark., says:

"Exports are booming!"

"I am not saying that the present imbalance of gold is a good thing," says Mr. Hughes, "but because there are so many American dollars overseas, they have the wherewithal to buy the soybeans, soybean oil and soybean meal that we have to sell."*

*(From Mr. Hughes' speech at New Providence, La.)

The June SOYBEAN DIGEST will be a special

EXPORT ISSUE

For More Information Contact

Art Hutchison, Dave Hanley or Bob Smythe
228 N. LaSalle-Chicago 1, Ill.-ST 2-2911

Dave Bramson, Advertising Director
Hudson, Iowa-TA 5-3296

Jack K. O'Donnell-153 Seaman Ave.
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Mr. Hughes

NEW PRODUCTS and SERVICES

STORAGE, DRYING. Aeroglide engineers, over the years, have made numerous proposed grain storage, receiving, and handling facilities for use in conjunction with Aeroglide grain driers.

The most economical of these potential arrangements have been selected and incorporated into a booklet entitled, "Grain Industry, Highest Profit Suggestions—Package Plants 18,000- to 81,000-Bushel Capacity." The objective is to adhere to accepted handling and arrangement practices, but to furnish a bare minimum of equipment. Such planning is oftentimes extremely helpful to the operator just going into business or building a new facility. Arrangements are planned so that they can be expanded either by adding storage or by incorporating further processing machinery.

For a copy of this booklet so long as the supply lasts write Soybean Digest 5a, Hudson, Iowa.

SEEDBURO LEASE PLAN. A new plan for leasing or financing Steinlite Moisture Testers and other grain testing, grading, and handling equipment was recently announced by Rex Yocum, president of Seedburo Equipment Co.



Under the plan, any order of \$315 or more may be placed on a lease basis with lease terms from 12 to 36 months. All payments are deductible and leases may be renewed when expired for only 6% of the initial cost per year.

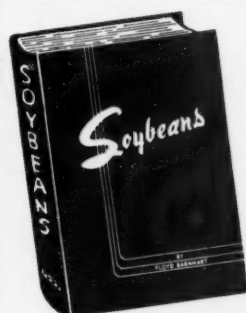
The financing plan, designed for purchases of \$1,500 or more, provides for minimum down payment and convenient monthly installments.

For further information write Soybean Digest 5e, Hudson, Iowa.

PRATER BROCHURE. A new 12-page brochure is now ready for distribution to cost-conscious progressive custom millers. It describes an unusual Prater program entitled the 4-P's Plan which is now ready to put into operation. This Prater Profit Protection Program is fully described and illustrated.

Such subjects are described as controlled cost, mill operation surveys, coordinating mill improvements, Prater-available engineering, and maintenance service.

For further information write Soybean Digest 5c, Hudson, Iowa.



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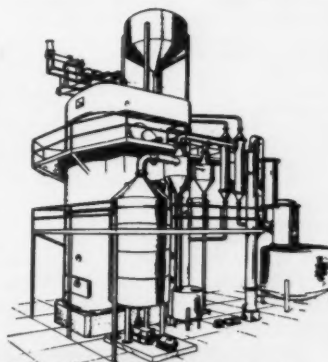
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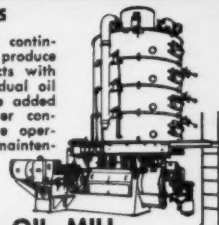


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IN THE MARKETS

STOCKS. Soybean stocks in all storage positions on Apr. 1 totaled 264 million bushels, down about 14% from Apr. 1, 1960, but still the third highest of record for the date, the U. S. Department of Agriculture reports. The reduction from last year was due entirely to the sharply lower farm stocks as the off-farm stocks were 15% above a year earlier.

Apr. 1 stocks indicate a disappearance during the 6-month period October 1960-March 1961 of 318 million bushels from a supply of 582 million bushels (carryover of 23.2 million plus production of 558.8 million bushels). During the period 218 million bushels were processed for oil and about 85 million bushels were exported. In addition some soybeans were fed, a quantity of new-crop beans were crushed prior to Oct. 1, and there is always some loss.

Soybeans: Total and off-farm stocks, Apr. 1 and Jan. 1 (1,000 bu.)

	Off-farm total ¹			Total all positions ²		
	Apr. 1, 1960	Jan. 1, 1961	Apr. 1, 1961	Apr. 1, 1960	Jan. 1, 1961	Apr. 1, 1961
Ohio	13,172	19,010	15,170	23,108	30,139	20,542
Ind.	*	16,856	10,639	*	38,579	19,196
Ill.	34,324	56,962	46,772	71,733	100,923	60,995
Minn.	17,679	20,447	17,065	35,179	39,257	26,261
Iowa	29,500	32,051	21,245	55,867	62,994	35,427
S. Dak.	431	321	202	1,030	1,137	661
N. C.	3,572	5,247	3,398	4,698	8,168	4,460
Tenn.	7,080	14,941	12,516	8,743	15,781	12,936
Miss.	4,880	10,622	5,603	6,957	14,503	6,828
Ark.	10,362	18,599	*	14,621	27,174	*
Other*	45,645	56,977	59,201	85,992	85,822	77,039
U. S.	166,645	252,033	191,811	307,928	424,477	264,345

* Included in other states to avoid disclosing individual operations.
¹ Includes stocks at mills, elevators and warehouses, terminals and those owned by Commodity Credit Corp. which are in bins and other storages under CCC control. ² Off-farm total plus farm stocks.

Stocks of soybeans, Apr. 1, 1961, with comparisons (1,000 bu.)

	Apr. 1 av. 1950-59	Apr. 1, 1960	Jan. 1, 1961	Apr. 1, 1961
On farms ¹	78,280	141,283	172,444	72,534
Commodity Credit Corp. ²	275	159	291	16
Processing plants ³	51,687	64,803	110,603	97,343
Mills, elev. & whses. ⁴	50,582	101,683	141,139	94,452
Total	180,823	307,928	424,477	264,345

¹ Estimates of the crop reporting board. ² Owned by CCC and stored in bins or other storages owned or controlled by CCC; other CCC-owned grain is included in the estimates by positions. ³ All off-farm storages not otherwise designated, including flour mills and terminal elevators.
⁴ Firms reporting crushings and stocks of soybeans to the Bureau of the Census.

STOCKS ON FARMS. Farm stocks of soybeans on Apr. 1 are estimated at 73 million bushels, only about half the record stocks of a year ago and the lowest for the date since 1956. The 10-year average Apr. 1 farm stocks is 78 million bushels.

Disappearance of soybeans from farms during the January-March quarter totaled 100 million bushels—by far the largest of record for the quarter. This compares with 55 million bushels last year and the average of 47 million bushels. A large part of soybeans put under loan from the 1960 crop had been redeemed by Apr. 1.

Soybean stocks on farms Apr. 1
Crop reporting board, SR5, USDA (1,000 bu.)

Average				Average			
	1950-59	1960	1961		1950-59	1960	1961
N.Y.	26	16	20	Md.	308	299	295
N.J.	138	244	131	Va.	515	835	485
Pa.	110	129	33	N.C.	921	1,126	1,062
Ohio	6,510	9,936	5,372	S.C.	519	1,835	1,380
Ind.	9,406	16,230	8,557	Ga.	130	195	123
Ill.	20,606	37,409	14,223	Fla.	31	63	21
Mich.	1,047	1,782	1,089	Ky.	394	721	460
Wis.	380	633	476	Tenn.	504	1,663	420
Minn.	10,470	17,500	9,196	Ala.	94	315	250
Iowa	15,823	26,367	14,182	Miss.	869	2,077	1,225
Mo.	5,266	10,487	6,551	Ark.	1,436	4,259	3,484
N. Dak.	419	1,272	435	La.	98	142	160
S. Dak.	672	599	459	Okla.	58	95	164
Nebr.	507	1,997	834	Texas	16	181	76
Kans.	741	2,643	1,031	U. S.	78,280	141,283	72,534
Del.	265	233	340				

EXPORTS. Preliminary data on U. S. exports of soybeans, soybean and cottonseed oils, and soybean and cottonseed cakes and meals for February 1961, with comparable data for February 1960 and cumulative totals for October-February in the marketing years 1959-60 and 1960-61, by USDA's Foreign Agricultural Service.

	Unit	February		October-February ¹	
		1960 ¹	1961	1959-60	1960-61
Soybeans	bu.	7,697,508	10,178,904	68,601,909	76,443,431
Soybean oil:					
Crude	lb.	33,832,893	22,363,937	126,899,763	244,195,781
Refined but not further processed	lb.	6,517,738	1,912,845	35,288,591	24,554,943
Refined, deodorized and hydrogenated	lb.	16,065,325	19,627,467	50,779,829	81,553,924
Cottonseed oil:					
Crude	lb.	48,376,531	11,159,085	186,466,352	119,909,462
Refined but not further processed	lb.	25,936,008	7,269,628	97,594,098	31,302,935
Refined, deodorized and hydrogenated	lb.	4,337,539	5,507,316	12,585,617	15,731,598
Cottonseed cake and meal	s.t.	2,957	2,748	117,899	34,930
Soybean cake and meal	s.t.	54,397	39,695	373,187	287,041

¹ Includes any revisions made by the Bureau of the Census. The total combined export of edible oils of 517 million pounds (soybean and cottonseed) in the first 5 months of the current marketing year was exceeded only in 1956-57 when a total of 624 million pounds had been exported in the corresponding period. The 350 million pounds of soybean oil in this year's 5-month total was exceeded only by the 401 million pounds exported in 1956-57.

Soybeans: Inspections for export by ports and areas, March 1961 (1,000 bu.)

Atlantic		New Orleans	
Philadelphia	614	Port Allen	3,035
Baltimore	1,276	Subtotal	1,781
Norfolk	168	March 1961	5,710
Subtotal	2,058	Jan.-Mar. 1961	7,768
Gulf		Jan.-Mar. 1960	25,647
Mobile	894	Jan.-Mar. 1960	23,744

Based on weekly reports of inspections for export by licensed inspectors and does not include rail and truck movement to Canada or Mexico.

Soybeans: Inspections for export by coastal areas and country of destination, March 1961 (1,000 bu.)

Atlantic		Netherlands	
Norway	75	Belgium	737
United Kingdom	252	West Germany	38
Netherlands	235	Italy	743
Japan	1,252	Japan	549
Belgium	37	Other	3,523
Other	207	Subtotal	37
Subtotal	2,058	Grand total	5,710
Gulf		Total Jan.-Mar. '61	7,768
Venezuela	83	Total Jan.-Mar. '60	25,647
			23,744

Based on weekly reports of inspections for export by licensed inspectors and does not include rail or truck movement to Canada or Mexico. In some cases, the ultimate destination of the soybeans exported is not shown on the inspection reports. Therefore, the quantity for each country may vary from official Census data which are based on custom declarations.

Cottonseed and soybean oils and lard: Exports under Title I, P. L. 480 programs, and total exports, October 1954-February 1961 (million lbs.)

	1954-55		Oct. 1-Sept. 30		Oct. 1-Feb. 28	
	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61
Exports under P. L. 480:						
Cottonseed	117	291	55	97	141	51
Soybean	—	279	495	592	747	90
Total oils	117	570	550	689	888	147
Lard	—	112	65	3	—	—
Total exports:						
Cottonseed	710	611	423	248	404	297
Soybean	50	557	807	803	941	1,213
Total oils	760	1,168	1,230	1,051	1,345	1,510
Lard	528	663	530	394	535	294

¹ Preliminary; P. L. 480 exports are reported according to the month in which the bill of lading was dated. ² February exports estimated. Foreign Agricultural Service, U. S. Department of Agriculture.

IN THE MARKETS

EXPORT ORDERS. U. S. Department of Agriculture announced the following purchase authorizations for U. S. soybeans and soybean products under P. L. 480 during April:

Apr. 3, amended No. 46-30, to United Arab Republic (Egypt) providing for purchase of additional \$1,656,000 worth (about 4,200 metric tons) of cottonseed oil or soybean oil, under supplementary agreement announced Jan. 17. As amended No. 46-30 provides for the purchase of \$3.9 million worth (about 11,200 metric tons) under P. L. 480 as part of the Food for Peace program.

Apr. 17, No. 12-27 to Chile to finance purchase of up to \$3.6 million worth (about 10,400 metric tons) of cottonseed or soybean oil, under agreement announced Nov. 8, 1960. Sales contracts between Apr. 24 and Aug. 31, shipments from U. S. ports between Apr. 24 and Sept. 30.

Apr. 20, No. 40-55 to Iceland to finance purchase of \$100,000 worth (about 300 metric tons) of cottonseed oil or soybean oil, under agreement announced Apr. 7. Sales contracts between Apr. 27 and Nov. 30, shipments from U. S. ports between Apr. 27 and Dec. 30.

USDA also announced (OP-18/61) on Apr. 20 that bids had been requested to supply 325 metric tons of cottonseed salad oil for export to Morocco under an International Cooperation Administration P. L. 480 (Title II) program, with bids due Apr. 27 for acceptance by USDA Apr. 28. Delivery May 15-20.

ICA Apr. 20 issued authorization to Iceland for purchase of \$300,000 worth of cake and meal, the contracting period between Apr. 12 and Dec. 31, terminal delivery date Mar. 31, 1962.

INSPECTIONS. Inspected receipts, by grade and percent, reported by Agricultural Marketing Service.¹

Grade	March 1961 ²		February 1961		March 1960		October 1960-1961		October 1959-1960	
	1,000		1,000		1,000		1,000		1,000	
	bu.	Pct.	bu.	Pct.	bu.	Pct.	bu.	Pct.	bu.	Pct.
No. 1	7,523	29	8,667	34	3,961	23	84,072	26	48,036	18
No. 2	12,479	47	11,647	46	8,034	48	153,063	46	131,830	50
No. 3	3,999	15	3,197	13	3,132	19	63,010	19	61,211	23
No. 4	1,486	6	1,356	5	1,138	7	23,092	7	17,278	6
Sample	855	3	634	2	484	3	7,375	2	7,713	3
Total	26,342	100	25,501	100	16,749	100	330,612	100	266,068	100

¹ Carlot receipts have been converted to bushels on the basis that 1 carlot equals 1,750 bushels. ² Of the March receipts 12,750 bushels were black, 1,750 brown and the remainder yellow soybeans. Inspections of soybeans in March included 5,803,170 bushels as cargo lots, 2,389,079 as truck receipts, and the balance as carlot receipts. Based on reports of inspections by licensed inspectors at all markets.

MELLORINE. Production of mellorine and other frozen desserts made with fats and oils other than milkfat in the United States in March was estimated at 4,040,000 gallons, the crop reporting board reports. This was 19% more than in March 1960 and 44% greater than the 1955-59 average for the month.

Compared with March a year ago, increases were shown in all important mellorine-producing states except Illinois, which had a decrease. Increases were sharp in Texas, Louisiana, Arkansas, Alabama, South Carolina, Arizona, and Oregon.

Production of "mellorine-type" frozen desserts, United States, 1961

	1955-59 average ¹		Estimated 1961		Change from: 1955-59 av. 1960	
	Thousand gallons		Thousand gallons		Percent	
January	2,016	2,273	2,595	2,900	+44	+12
February	2,192	2,464	2,920	3,205	+46	+10
March	2,810	3,360	3,400	4,040	+44	+19
3-month total..	7,018	8,097	8,915	10,145	+45	+14

¹ From enumerations.

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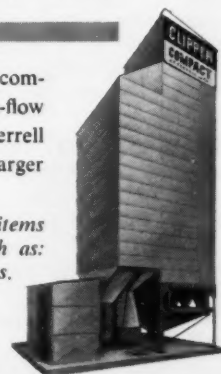
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IN THE MARKETS

PROCESSING OPERATIONS. Reported by Bureau of the Census for February and March 1961.

PRIMARY PRODUCTS EXCEPT CRUDE OIL AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS, AND STOCK, MARCH 1961—FEBRUARY 1961 (1,000 short tons)

	Production		Shipments and transfers		Stocks end of month	
	March 1961	Feb. 1961	March 1961	Feb. 1961	Mar. 31 1961	Feb. 28 1961
Soybean:						
Cake and meal	801.7	*796.5	786.9	*763.4	178.4	*163.6
Millfeed (hull meal)	15.5	*13.1	12.8	*12.1	7.7	5.0

* Revised.

SOYBEANS: NET RECEIPTS, CRUSHINGS, AND STOCKS AT OIL MILLS, BY STATES, MARCH 1961—FEBRUARY 1961 (1,000 short tons)

	Net receipts at mills ¹		Crushed or used		Stocks at mills	
	March 1961	Feb. 1961	March 1961	Feb. 1961	Mar. 31, 1961	Feb. 28, 1961
U. S.	708.5	*843.5	1,043.9	*1,036.6	2,920.3	*3,255.7
Arkansas	(2)	(2)	(2)	(2)	(2)	(2)
Illinois	283.4	289.9	303.4	312.5	687.9	707.8
Indiana	59.0	69.0	99.5	99.1	233.2	273.7
Iowa	121.2	172.9	170.6	173.6	330.1	379.6
Minnesota	52.2	90.1	68.6	64.1	127.5	143.9
Mississippi	7.7	0.9	45.3	32.7	129.4	167.0
Missouri	(2)	(2)	(2)	(2)	(2)	(2)
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)
North Carolina	8.2	5.4	15.6	16.3	80.5	87.9
Ohio	48.0	62.7	77.0	82.7	254.1	283.1
Tennessee	51.1	45.3	72.8	83.9	356.8	378.5
All other	77.7	*107.3	191.1	*171.7	720.8	*834.2

* Revised.

Note: Detail figures may not add to totals because of independent rounding.

¹ Net receipts for each state are derived from the quantity of beans crushed and net change in stocks.

² Included in "All other" to avoid disclosure of figures for individual companies.

SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, MARCH 1961—FEBRUARY 1961

	Crude oil (millions of pounds)		Coke and meal (thousands of tons) ¹		Production		Stocks	
	Mar. 1961	Feb. 1961	Mar. 1961	Feb. 1961	Mar. 1961	Feb. 1961	Mar. 1961	Feb. 1961
U. S.	381.1	*377.6	87.7	*93.4	817.2	*809.6	186.1	*168.6
Arkansas	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
Illinois	113.4	116.1	26.8	26.1	231.2	236.4	48.0	52.7
Indiana	36.1	36.0	(2)	(2)	78.9	78.4	(2)	47.0
Iowa	61.0	61.7	12.3	9.2	137.2	139.3	27.1	25.5
Minnesota	24.4	23.3	5.9	8.1	53.6	50.3	3.8	5.9
Mississippi	16.8	12.0	2.6	2.4	35.4	24.7	10.0	5.4
Missouri	(2)	(2)	(2)	(2)	(2)	(2)	2.3	4.3
Nebraska	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
N. Carolina	5.3	5.7	1.5	2.2	12.4	12.7	1.8	2.3
Ohio	27.9	30.3	4.4	6.1	62.0	66.6	6.1	4.7
Tennessee	26.8	30.9	6.8	11.1	56.7	65.4	6.2	8.0
All other	69.4	*61.6	27.4	*28.2	149.8	*135.8	80.8	*12.8

* Revised.

Note: Detail figures may not add to totals because of independent rounding.

¹ Includes mill feed (hull meal).

² Included in "All other" to avoid disclosure of figures for individual companies.

SUPPLY, DISTRIBUTION of soybeans for the 1957-60 crop years, from Agricultural Marketing Service (1,000 bushels).

	1960-61	1959-60	1958-59	1957-58
Carryover, Oct. 1	23,209	62,117	21,083	9,897
Production	558,778	533,175	579,713	483,715
Total supply ¹	581,987	595,292	600,796	493,612
Farm use, including seed for season	35,000	39,000	28,000	34,000
Quantity remaining for processing, export, or carryover	546,987	556,292	572,796	459,612
Disappearance Oct. 1 through March:				
Crushed for oil or processed ²	217,670	204,487	208,099	174,772
Exported	384,443	75,770	60,777	54,111
Total	302,113	280,257	268,876	228,883
Balance on Apr. 1 for processing, export or carryover	244,874	276,035	303,920	230,729

¹ Imports not included because negligible. ² No allowance is made for new crop prior to Oct. 1. ³ Estimated

PRICES. Average price for soybeans received by farmers, effective parity, and support rates, reported by Agricultural Marketing Service (dollars per bushel).

	Average farm price			Effective parity	Av. price as percent of parity	National average price support rate		
	Mar. 15, 1961	Feb. 15, 1961	Mar. 15, 1960	Mar. 15, 1961	Mar. 15, 1961	1961 crop	1960 crop	1959 crop
	2.68	2.48	1.99	2.90	92	2.30	1.85	1.85

Average farm and parity prices from crop reporting board.

Soybean prices compared with market value of soybean oil and meal

	Soybean oil		Soybean meal		Value of oil and meal	Market price of yellow soybeans	Spread between soybean price and value of oil & meal
	Average price at crushing plant	Value from bu. of soybeans ¹	Bulk price at decatur	Value from bu. of soybeans ¹	Value of oil and meal	No. 1 yellow soybeans	
	Cts. per pound	Dollars	Dollars	Dollars	Dollars	per bu.	Cents
Mar. 1961	213.0	1.43	64.45	1.51	2.94	2.86	8
Feb. 1961	12.1	1.33	61.50	1.45	2.78	2.66	12
Jan. 1961	10.8	1.19	55.20	1.30	2.49	2.39	10
Dec. 1960	9.9	1.09	51.25	1.20	2.29	2.15	14
Nov. 1960	10.0	1.01	44.50	1.05	2.15	2.05	10
Mar. 1960	7.7	0.85	55.85	1.31	2.16	2.08	8

¹ Based on assumption that a bushel of soybeans yields 11 pounds of oil and 47 pounds of meal. ² Preliminary.

Agricultural Marketing Service, USDA.

FACTORY USE VEGETABLE OILS for January and February 1961. Reported by Bureau of the Census.

Selected edible oils: Production, consumption, and factory and warehouse stocks (million lbs.)

	Cottonseed oil		Soybean oil	
	Feb. 1961	Jan. 1961	Feb. 1961	Jan. 1961
Production:				
Crude oils	179.0	223.8	371.1	418.7
Refined oils (once refined) ¹	149.0	172.9	298.5	326.0
Consumption in refining ¹	161.6	187.5	310.2	337.1
Consumption in selected edible and inedible products, total ²	118.6	119.7	280.8	310.9
Consumption in edible products, total	118.2	119.1	266.3	294.6
Baking or frying fats	35.8	35.7	94.1	94.1
Salad or cooking oil	65.2	65.9	74.5	86.9
Margarine	16.7	16.9	95.9	111.5
Other edible products ³	0.5	0.6	1.8	2.1
Stocks, end of month, total ²	463.4	*433.5	593.9	*535.0
Crude oils	164.6	164.8	359.8	*355.4
Refined oils	298.8	*268.7	234.1	*179.6

* Revised. ¹ Production of refined oils covers only once-refined oil. Degummed soybean oil is reported as crude oil. ² Includes hydrogenated fats (vegetable and animal) and other fats and oils "in process," (e.g. refined cottonseed includes stocks of stearin). ³ Includes confectioners fats.

TERMINAL STOCKS of soybeans. Includes all soybeans in public elevators including government-owned stocks. By Agricultural Marketing Service (1,000 bushels).

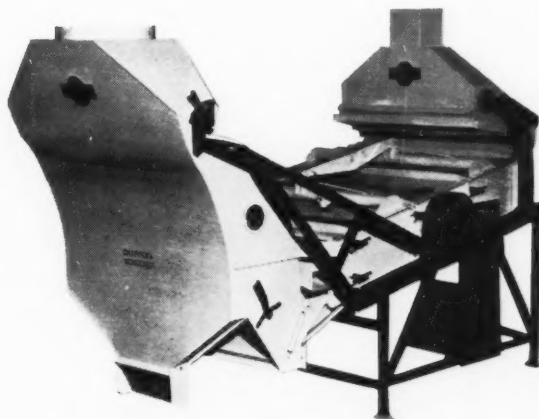
U. S. Soybeans in store and afloat at domestic markets

	Mar. 28	Apr. 4	Apr. 11	Apr. 18
Baltimore	1,718	1,517	1,205	691
Buffalo	137	137	137	137
Chicago	15,296	14,886	14,300	14,211
Afloat	286	286	286	48
Des Moines	23	23	23	23
Duluth-Superior	3,345	3,349	3,364	3,389
Indianapolis	1,208	1,209	1,174	1,163
Kansas City	3,416	3,430	3,338	3,271
Milwaukee	201	202	202	202
Minneapolis	2,636	2,638	2,640	2,407
New Orleans	1,547	1,453	1,269	1,473
Afloat	1,000	1,120	760	760
Omaha-Co. Bluffs	1,416	1,401	1,388	1,386
Peoria	103	115	128	137
Philadelphia	425	360	44	60
Sioux City	881	845	882	880
St. Joseph	30	7	7	7
St. Louis	3,962	3,695	3,424	3,412
Toledo	5,391	5,538	5,522	5,276
Visible Supply ⁴	43,021	42,191	40,093	38,933
Grand Totals				
This Week	43,021	42,191	40,093	38,933
Year Ago	29,442	28,524	27,082	26,681
Total Chicago				
soybean stocks	15,582	15,152	14,586	14,259

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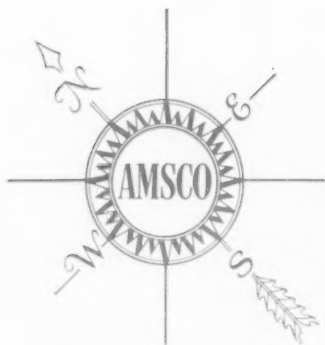
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